

IMPACT OF THE RELATIONSHIP BETWEEN ENGLISH LANGUAGE ARTS TEACHER
TEAM COLLABORATION IN CREATING COMMON FORMATIVE ASSESSMENT, ON
THE ACADEMIC ACHIEVEMENT OF MIDDLE SCHOOL STUDENTS

by

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WE, THE UNDERSIGNED MEMBERS OF THE COMMITTEE,
HAVE APPROVED THIS DISSERTATION

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Abstract

This study identified the relationships among English Language Arts teacher teams, their collaboration in creating formative assessment, and its impact on the academic achievement of middle school students. The setting of this study was two urban private Nursery through Grade 8 elementary schools in 1 New York City district. The design for this study was a mixed-method research design, which gathered both quantitative as well as qualitative data to answer the research questions. The research included observations, interviews, small samples of lesson plans, and standard assessment tools (*t*-test). The observations took place in 2 different 6th grade English Language Arts classrooms, as well as observations of 1 school's teacher team meeting. The data gathered, in addition to the observations, were pre- and post-English Language Arts test from both classes. The results did not support the theory that when teachers work collaboratively in teacher teams, that there is a positive impact on their students' academic performance.

Dedication

To my husband Walter, who always supported me during my quest to further my education. My regret is that you are not here to see my lifelong dream come true. I know you will continue to be the wind beneath my wings as I continue in the field of education. To my wonderful children Kristofor and Pia, who were always there to support me as I managed work, school, and my education, and to the apple of eye Mikael Walter who has brought so much joy to my life. To all my family and friends who with their support and love gave me the courage to complete this work, thank you all.

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Chapter 1

Collaborative Teachers and Common Formative Assessment

A classroom teacher, who uses assessment to support daily instruction, constantly adapts teaching to support the needs of his or her students (Leahy, Lyon, Thompson, & William, 2005). There are two major assessment designs: formative and summative (Popham, 2008). Formative assessment examines students' current work and its relationship to the students' learning goal (Brookhart, 2010). Summative assessment evaluates a students' status in relation to a learning target or learning standard (Tomlinson & Moon, 2013).

The purpose of this study is to identify the relationships among English Language Arts teacher teams, their collaboration in lesson planning utilizing formative assessment, and its impact on the academic achievement of middle school students. A mixed-method design was used, incorporating both qualitative as well as quantitative data. The research took place in classrooms that were a natural setting and it included observations, interviews, and surveys (Roberts, 2004). Other studies have discussed collaboration, formative assessment, and curriculum design (Voogt, Pieters, & Hanselzalts, 2016). Smitt (2006) discussed the impact of teachers' common planning on student academic performance in middle schools in the State of Texas. This study expands the work of Smitt (2006) and goes deep into the collaboration and its effect on student academic achievement using formative assessment.

Collaboration, as described by DuFour (2004), is when the staff either works together to reach a consensus on operational procedures in a school, to design instruction to meet the needs of the students in their school, or to examine student work to develop interventions. Troen and Boles (2012) described successful collaborative teacher teams as having the following five elements: structure, leadership, a cooperative climate, personal accountability, and a task. These

teacher teams must have sustained collaboration in the areas of strategies, curriculum, and assessment as a primary vehicle to guarantee student improvement (Killion, 2015). A MetLife survey on teacher teams reported that when teachers engaged in teamwork, their students earned higher scores on achievement tests (Barth, 2013).

The teacher-team structure has shifted the work from a merely casual discussion of student products to a close examination of student daily performance and planning for all students (Sparks, 2005). The focus of this study analyzed the work of an English Language Arts teacher team in planning lessons for their students utilizing formative assessment, and how this collaboration influences academic achievement. The collection of data included observation notes from teacher team meetings, surveys completed by the teachers, and the formative assessment data of the middle school students.

The collaborative movement is a natural progression in the middle-school structure because of the departmentalization of a subject area; English Language Arts teacher teams organically gravitate to one another (Boyer & Bishop, 2004). These groups provide for collaboration across content. They practice and focus on the instructional needs of middle school students in English Language Arts.

Meeting the needs of the middle school student is a challenge, and therefore, educators need to take advantage of the varied resources that collaborative teams bring to the table to provide an enriching, challenging, educational system (Boyer & Bishop, 2004).

This teacher team examined formative assessment and included, but was not limited to, students' daily classwork. Popham (2008) discussed formative assessment as a process used by teachers and students. This process takes place during instruction and it adjusts ongoing teaching and learning, resulting in students' achievement of intended instructional outcomes.

There is a need to refine the structures in middle school (Piercy & Piercy, 2011). The time is now to examine how collaboration among teachers, especially middle school English Language Arts teachers and their lesson planning using formative assessment, can influence the academic performance of middle school students.

Background of the Study

The purpose of this study is to identify the relationship to the planning done collaboratively by middle school English Language Arts teacher teams when analyzing formative assessment, and its impact on academic achievement of middle school student. This work is in line with a law passed in 2015 describing that schools need to adopt a reform plan that will increase academic performance (Huetteman, 2015). These teacher teams, as described by Sterrett (2016), are considered an innovation of school reform. They work collaboratively in communities to improve student academic performance.

Teacher teams can be designed according to department or subject and/or content (Math, English Language Arts, Social Studies); across a school, vertical and horizontal teams; or across district, school to school (Danielson, 2007). A functioning teacher team has a clear purpose and structure, the work is meaningful, and sharing learning is not hampered by conflict. When conflict arises, it is openly discussed through a nonjudgmental dialogue. This conflict is allowed because the environment is trusting and all participants have equal time to speak and listen. The final element of a successful teacher team is that the facilitator role is shared with rotation of roles and responsibilities (Aguilar, 2012). These teacher teams, specifically middle school English Language Arts teachers, and their lesson planning collaboration are the focus of this study and their impact on the academic achievement of middle school students.

Collaboration. DuFour (2004) discussed that the idea of improving student performance through collaborative teacher teams is currently in practice throughout a wide range of school communities and can be described through many different combinations of teachers working collaboratively in a variety of team structures. Collaboration in teacher teams is described as the collegial interactions of teachers in a nonjudgmental, supportive environment (Langer, Colton, & Goff, 2003). This idea of collaboration was first developed in the early 1990s when Fullan (2002) discussed the importance of collaboration in schools. The idea of collaboration, whether on a small or large scale, is one of the core beliefs that school communities are developing to assist in getting things done and getting them done right. Farina and Kotch (2008) in the early 2000s, embraced this trend because it created a positive sense of community, stimulated learning, and offered a structure that resulted in school improvement. Through this collaboration, teachers are learning to shift the practice of just teaching, to ensuring that all students are learning, resulting in improved academic achievement of students (Farina & Kotch, 2008).

The five key elements on which collaboration is built and sustained are the identification of roles and responsibilities, a set of behaviors and relationships, a focus, a process, and these elements in a structure. Collaboration further builds upon the belief that all students are the responsibility of all teachers in a school community. The system benefits from a collective group of teachers instead of one classroom teacher. In the past, the classroom teacher closed her or his door and did not open it until the end of the day (Sparks, 2005). Teachers worked in isolation. Sustained collaboration will be explored further as this study examines the relationship between the collaboration of middle school teacher teams, their planning, and its impact on the academic achievement of their students.

Formative assessment focuses on learning goals and the current classroom work in relation to these goals (Popham, 2008). Through formative assessment, teachers analyze their daily instruction and how this instruction prepares the students to achieve their goals (Brookhart, 2010). The most productive formative assessment in classrooms involves both students and teachers analyzing the task and how it aligns to the goals of a standard.

Statement of Problem

Well-functioning collaborative teacher teams are essential to continuous school improvement (Sparks, 2013). Effective teacher teams strengthen teaching and learning, and improve student academic performance (Sparks, 2013). Research in this area needs to be expanded to examine the work of teacher team collaboration in creating common formative assessment that affects middle school students' academic achievement.

The aim of this study was to identify the relationships among English Language Arts teacher teams, their collaboration involving common formative assessment, and its impact on the academic achievement of middle school students. A mixed-method design was used, incorporating both qualitative as well as quantitative data. The research included observations, interviews, and small samples of middle school English Language Arts lesson plans (Roberts, 2004).

According to the National Education Association (2017), only 38% of all students nationally in Grades 3 through 12 are proficient in English Language Arts. This is a little more than one third of the student population; something needs to be done. Previous studies in this area have been done with collaborative teacher teams and students. Gusky (2003) discussed the need for informal assessment in the classroom as a second chance for students to give them an opportunity to experience success and growth in learning. Smitt (2006) discussed the impact of

teachers' common planning on student academic performance in middle schools in the State of Texas. Jones (2015) analyzed the relationship between formative assessment in middle schools and the causal factors of leadership and coaches. This study expanded the work of Smitt (2006) and Jones (2015) by analyzing the effect of informal assessment on the collaboration and planning of lessons and its effect on middle school students' academic achievement. There is a need to know if this collaboration can give students a successful second chance at learning.

Purpose of Study

The purpose of this study is to identify the relationship between common formative assessment through teacher collaboration, and its impact on academic achievement of middle school students. These collaborative teacher teams, as described by Sterrett (2016), are considered an innovation of school reform and in line with law of 2015 that requires all schools have a mechanism in place that will increase student academic performance (Huetteman, 2015).

Teacher teams. Teacher teams can be designed according to department or grade level, and/or content (Mathematics, Science, or Social Studies); across a school, vertical or horizontal teams; or across a district, school to school (Danielson, 2007). A functioning teacher team has a clear purpose and structure, and the work is meaningful, through shared learning and collaboration. If conflict arises, it is openly discussed through a nonjudgmental dialogue. This conflict is allowed because the environment is trusting and all participants have equal time to speak and listen. The final element of a successful teacher team is that the facilitator role is shared with a rotation of roles and responsibilities (Aguilar, 2012). These teacher teams, specifically middle school English Language Arts teachers, and their lesson planning collaboration is the focus of this study and its impact on the academic achievement of middle school students.

Formative assessment. Fullan (2016) discussed the importance of formative assessment and the work of teacher teams in transforming classroom instruction as key elements. He outlined four steps in this transformation as follows: Step 1 discussed the need for assessment tools that are aligned to daily lesson learning objectives. Step 2 discussed the concept of teacher teams analyzing data and converting this analysis into instructional decisions. Step 3 was to look further at the assessment information specific to students and to customize instruction to meet the needs of the child. Step 4 was the final step that through the work of teacher teams, learning and assessment are monitored and systematically adjusted to improve instruction so that every child has the optimum learning condition (Fullan, 2016).

Tomlinson (2014) further discussed that formative assessment is the bridge between today's lesson and tomorrow's, and it is assessment for instruction. Assessment for instruction (formative assessment) is to be used in understanding and addressing student needs, interests, and approach to learning.

The purpose of this study analyzes both of these components of education and how common formative assessment created collaboratively in teacher teams affects middle school students' academic performance.

Theoretical Framework

Formative assessment began with the work of Paul Black and Dylan William in 1998 (Popham, 2008). British researchers Black and William argued that if formative assessment is used properly in all classrooms, students will learn. Black and William also concluded that formative assessment is the best intervention to use to improve student outcomes (Popham, 2008).

Once it became evident that formative assessment is effective in improving student learning, the next question was can it improve student academic achievement measured by testing (Popham, 2008).

The concept of teacher teams did not evolve in the 21st century. It has a long history dating back 100 years. Prior to the teacher team leadership this structure was part of school reform and improvement during the 20th century (Danielson, 2006). The lead philosopher in education during that time was John Dewey. His teachings centered on the democratic school that included both students and teachers as viable partners in this democratic structure called school. The schools during Dewey's time had site councils that included teachers who were instrumental in making all school decisions that affected their students. This concept of teacher participation in decision making has a long history and is common only in the schools in which the school leader has autonomy in the running of the school (Danielson, 2006). Collaborative teacher teams are discussed through this research, and defined as middle school English Language Arts teacher teams, organically designed, examining common formative assessment and impacting on middle school students and their academic performance as it relates to teacher lesson planning. This study is in line with the pure organic philosophies of John Dewey.

This research examined the relationship between common formative assessment and middle school student academic achievement. This study examined the organic teacher collaboration as defined by Dewey and attempted to answer the question: Can common formative assessment be measured in testing?

Research Questions

The purpose of this study is to provide research that will support the work of middle school English Language Arts teacher teams planning collaboratively using teacher-made

common formative assessment and its result on the academic performance of middle school students. The format for these research questions is selected because both quantitative and qualitative data were examined, including open-ended questions, surveys, interviews, observations, and *t*-test comparisons of reading test scores. It also included studying people in the field in a natural setting using multiple research methods (Roberts, 2004). This study discussed insights that are guided by the following questions:

1. To what extent does participation in a collaborative teacher team influence the creation of common formative assessment?
2. How does teacher perception of collaborative teacher teams influence their work in curriculum building?
3. To what extent do these common formative assessments create in collaborative teacher teams effect student achievement?

These questions will be recognized throughout the study by the following headings:

- The role of participation in collaborative teacher team influence the creation of common formative assessment;
- The role teacher perception of collaborative teams influences the work of curriculum building; and
- The role of common formative assessment on student academic performance.

Definition of Terms

This section defines the key terms discussed in the work of this study. A teacher team is the term that will be used throughout the study. Teacher teams are a group of colleagues that work collaboratively and interdependently to achieve a specific measurable goal (Reeves, 2009). The teacher team that was the focus of this study examined formative assessment to plan

instruction and collected these data to inform instruction in the middle school English Language Arts classroom. Instruction is defined as active teaching that follows a sequence of four steps: first the teacher prepares the materials, then presents the materials, then the teacher presents association of topics to students to assist with generalizations, and, finally, the students apply these skills to further skill development (Pollock, 2007). Collaboration in teacher teams is described as the collegial interactions of teachers in a nonjudgmental, supportive environment (Langer et al., 2003). The idea of collaboration, whether on a small or large scale, is one of the core beliefs that school communities are developing to assist in getting things done and getting them done right. Farina and Kotch (2008) in the early 2000s, embraced this trend because it created a positive sense of community, stimulated learning, and offered a structure that resulted in school improvement. Through this collaboration, teachers are learning to shift the practice of just teaching to ensuring that all students are learning, resulting in improved academic achievement. This academic achievement is the goal, and the process of this work was accomplished through the lens of formative assessment work products of the students in the middle school English Language Arts classrooms.

Formative assessment is a process that involves both student and teacher (Ainsworth & Viegut, 2006). The teachers create the standards-based current instructional focused assessment, and administer this assessment to the students. The intent of this assessment is to influence the adjustment of ongoing instruction to improve student performance (Ainsworth & Viegut, 2006). It is further defined as a planned process in which assessment evidence from student work is used by the teacher to adjust instruction to meet the needs of the student (Popham, 2008).

Delimitations, Limitations, and Assumptions

This section addresses the conditions of the study that are present, narrow, and may present a weakness in the study. Delimitations of the study narrow the scope of the research (Roberts, 2004). The following are the delimitations of this study. The subjects were only teachers from one school located in one school district. The study only included teachers who teach the English Language Arts curriculum. Teachers who participated in this study were trained as teacher teams in the same school district. The teachers who participated are all middle school teachers.

The limitations of this study describe the weakness beyond the control of the researcher. These limitations included small sample size and a short span of time performing the observations. These are limitations, and the summary chapter will define further limitations of this study (Leedy & Ormrod, 2010). This research study was only conducted in one school district in one Northeastern state. The results of only one standardized test were used to measure student achievement. The researcher bias and experience or attitude on teacher teams, the structures of the teams, and measures of formative assessment were all limitations of this study.

An assumption is a tenet of a study that is not fully able to be controlled, but if it is missing from the study, it will make it irrelevant. The assumptions are probably true; otherwise the study cannot take place (Leedy & Ormrod, 2010). The following assumptions were made for this research: The middle school teachers in this study all received the same training in the development of teacher teams; the middle school teachers that are subjects of this study are representatives of typical middle school teachers; and the formative assessments used throughout the study are representative of common formative assessments.

Nature of the Research

The purpose of this research is to investigate the relationship between the independent variable (having teachers who participate in teacher teams and create formative assessment) and the dependent variables (student achievement) using a mixed-methodology research design. This mixed-methodology design of research, comparing two nonequivalent groups, allowed for the most similar context to compare the participants and variables.

Method Overview

Creswell (2009) discussed that the methodology of a research project is the most concrete part of the project. Roberts (2004) further discussed that methodology selection is built upon four principals. The first is the purpose of the study, next the problem, followed by the theory, and, finally, the nature of the data. The problem can be studied through either a quantitative, qualitative, or mixed-method design (Roberts, 2004). The method to be used for this dissertation will be a mixed methodology.

The reason for this selection is because the subjects are described (teacher teams and students). They were observed in a natural setting (classrooms and teacher team meetings). The samples are small and purposeful because the basis of the study is: Do teacher teams creating common formative assessments affect middle school students' academic performance? The sample of teacher teams and students were only teachers who teach English Language Arts, and the classrooms observed were only Middle School English Language Arts classrooms. The researcher's instruments were observation, as well as surveys and interviews of both subjects for this study. The researcher also used test data, created a *t*-test, and constructed summary graphs, which are elements of a mixed-methodology study (Roberts, 2004).

Mixed-methods design incorporated both quantitative as well as qualitative data. The reason for this selection is that one type of data influences the outcomes of the other data. Both qualitative and quantitative data are utilized in an educational setting (classrooms) to understand a variety of questions in education. Quantitative data provided statistical information gathered through the quantitative section of the study, and the personal perspectives were gathered through the qualitative section of the study. The choice of a mixed-method design was because it provided both perspectives to a problem (Privitera & Ahlgrim-Dezell, 2019).

The subjects of this research were two nursery through Grade 8 schools both in New York City, both in the same school district, both with similar demographics and enrollment. School 1 was the school that engaged in collaborative teacher team creation of formative assessment. School 2 was the school that did not engage in collaborative teacher team creation of formative assessment. Teachers teams were identified as, for School 1, Team 1A, and for School 2, Team 2A. All student subjects of this study were identified by the school number followed by an additional number (e.g., School 1: Student 101). All teacher subjects were identified by an alias such as Teacher 101 from school 1, and Teacher 201 from school 2. All of the above nomenclature were created to protect the privacy of the study subjects.

Dissertation Structure

This dissertation structure is a mixed-method design, qualitative as well as quantitative paradigm. Qualitative paradigm is referred to as the naturalistic design in research (Roberts, 2004). It is an inquiry method of study that begins with a specific plan, with a collection of questions and a detailed hypothesis. The researcher was interested in the subjects (teacher teams) and their activities (creating formative assessment). The data collected in this research were from multiple sources such as surveys, observations, tests, and experiments. The qualitative design

includes a natural design, inductive analysis, observations, interviews, small samples of data, and exploring concepts (Roberts, 2004).

The qualitative paradigm is an experimental design that tests a hypotheses and standardized measures (*t*-test) to inform the research that was conducted using the qualitative method (Roberts, 2004).

This design is discussed in a five-chapter structure. Chapter 1 is the introduction to the study, stating the purpose for conducting this research. This chapter also discussed the framework for the study, definition of terms, assumptions, delimitations, limitations, and the guiding research questions (Roberts, 2004).

Chapter 2 is a review of research literature that described previous studies that broadened the topic of research. It further develops the topic and its structure of study. An important part of Chapter 2, is that it clarifies the important research concerning the topic in this dissertation (Roberts, 2004).

Chapter 3 explains the research design procedure and methodology. It explains how the study was preformed, and which protocols were used to collect data and evaluation (Roberts, 2004).

Chapter 4 is the chapter that describes all the factual evidence. It included data formative assessment results, as well as standardized test results, along with survey feedback. This chapter answered all the research questions in Chapter 1 (Roberts, 2004).

Chapter 5 is the final chapter that concludes the research through discussion and further recommendations of this study. It is a recap of the guiding questions and major findings of the study. It defines the relationships among the results, the research, and the investigation used throughout the study (Roberts, 2004).

Summary

The purpose of this study is to identify the relationship between the creation of common formative assessment through teacher collaboration and its impact on academic achievement of middle school students. The beneficial outcome of collaborative teachers developing formative assessment and its effect on student academic performance have been discussed and analyzed by researchers and educators (Hanover, 2014). Vella (2002) further discussed that a community of learning practitioners who work together as a team are part of a successful school environment. This study is built upon prior research examining the impact of teachers' collaboration in creating common formative on students' academic achievements.

Can common formative assessment, created through teacher teams, identify student learning needs and shape the curriculum taught in classrooms daily? When incorporated into daily practice, can formative assessment adjust teaching and learning to inform both teachers and students about student understanding during the time of instruction (Garrison & Ehringhaus, 2013)? These questions were discussed throughout this research study.

The framework for this study of teacher team collaboration and common formative assessments and its impact on the academic performance of middle school students are outlined in this chapter.

The terms and questions that are discussed throughout this study have been delineated in this chapter and are further developed throughout the research. The following chapters provide information pertaining to the use of common formative assessment created by teacher teams in daily instruction and its influence on the academic achievement of middle school students. At the conclusion of this study, the researcher defined the question: Can collaboration of common formative assessment affect the academic performance of middle school students?

Chapter 2

Literature Review

The purpose of this study was to identify the relationships among English Language Arts teacher teams, their collaboration in creating formative assessment, and its impact on the academic achievement of middle school students. The setting of this study was two urban private nursery through Grade 8 schools in one New York City district. School 1 had 206 students: 4% of the student population are Asian, 68% Black, 8% Hispanic, and 20% White, and 2% are students with disabilities. School 2 had 387 students: 95% Black, 5% White, and 2% students with disabilities. The subject of the study is English Arts middle school teacher teams of which 95% of the teaching staff taught three years or more, how they use common formative assessment, and its effect on the academic achievement of middle school English Language arts students (Diocese of Brooklyn Catholic Schools, 2018).

The design for this study was a mixed-method design, which is in a naturalistic design, descriptive, using an inductive analysis. The research included observations, interviews, small samples of lesson plans, and assessment tools (Roberts, 2004). Other studies have discussed collaboration, formative assessment, and curriculum design (Voogt et al., 2016). This study delved into collaboration in creating common formative assessment and its effect on student academic achievement.

This chapter is a review of the literature summarizing studies about teacher collaboration in creating common formative assessment in the middle school and its effect on student achievement.

The conceptual framework set the foundation of the study and how teacher teams in middle schools examine data collected through formative assessment and adjust instruction.

Formative assessment has been proved to be critical in learning, but not always successfully woven into instruction (Heritage, 2010). Tomlinson (2014) discussed that there is a large amount of conversation surrounding formative assessment, and how it can improve the process of teaching and learning. When teachers do this work in teams, the benefits are an increased commitment to school vision and mission, shared responsibility for student success, increased meaning to the content, and a commitment to making lasting and significant changes (Gregory & Kuzmich, 2007). These guiding forces in education are the key points of this study. This chapter is divided into major categories, including the conceptual framework. This research included theoretical framework underpinnings of formative assessment and teacher teams, and the history of formative assessment and teacher teams, topic rationale, and scholarly research.

Conceptual Framework

The purpose of this section is to organize the ideas of the study and to provide a conceptual distinction among the variables of this study.

Scope and importance of field of study. Michael Scriven, in 1967, as part of a study of evaluations done by the American Educational Research Association, made the distinction between formative and summative assessment (as cited in Marzano, 2006). His original findings indicate that programs are either formulated (summative) or programs evolved through formative assessment into their final stage. Marzano (2006) further discussed that formative assessment is occurring while the teacher is teaching and learning is taking place. Many different scholars have reviewed assessment and concluded that formative assessment might be the most powerful tool in a teacher's daily toolbox.

In 2006, the Council of Chief State School Officers, an organization of state superintendents that creates policy for schools, created a definition of formative assessment (as

cited in Popham, 2008) based upon the work of Scriven. The council defined it this way, “Formative assessment is a process used by teachers and students during instruction that provides feedback to adjust ongoing teaching and learning to improve students’ achievement of intended instructional outcomes” (p. 5). The definition was further delineated to describe it as a process that provides assessment-based feedback to allow for adjustments to instruction (Popham, 2008). Formative assessment should be frequent with feedback given to the student so that it provides a clear picture of his or her goals and progress toward these goals (Marzano, 2006).

Fullan (2002) discussed the importance of formative assessment and the work of teacher teams in transforming classroom instruction as key elements. His study outlined four steps in this transformation as follows: Step 1 discussed the need for assessment tools that are aligned to daily lesson learning objectives; Step 2 discussed the concept of teacher teams analyzing data and converting this analysis into instructional decisions; Step 3 was to look further at the assessment information specific to students and to customize instruction to meet the needs of the child; and Step 4 was the final step that through the work of teacher teams, learning and assessment are monitored and systematically adjusted to improve instruction so that every child has the optimum learning condition (Fullan, 2016).

Tomlinson (2014) further discussed that formative assessment is the bridge between today’s lesson and tomorrow’s and its assessment for instruction. Assessment for instruction (formative assessment) is to be used in understanding and addressing student needs, interests, and what approach to use for learning.

Formative assessment should rarely be graded; instead, there should be a feedback dialogue between teacher and student. This feedback should include the student’s area of

proficiency and area in need of development. The student is then working to refine his or her area in need of development. Therefore, initial grading of the material is premature (Tomlinson, 2014). The why of formative assessment is the second chance a student needs to demonstrate success, which improves instruction and helps with the learning process (Gusky, 2003). There is a wide variety of formative assessments, including quizzes, tests, and written assignments that are given on a regular basis in the classroom. They provide immediate results and data for each individual child (Gusky, 2003).

In order for teachers to use formative assessment successfully, they must first know the why of formative assessment and learn to examine closely the results of each student's work. Teachers need to see that formative assessment is an integral part of the instructional process in the classroom (Gusky, 2003).

Assessment practices need to be a seamless part of teaching and learning and need to occur frequently. In order for this to occur, it is recommended that teachers meet as a team and design common formative assessment (Bailey & Jakicic, 2012). The term common formative assessment refers to assessment created by teachers who either teach the same content or teach the same group of students (Bailey & Jakicic, 2012). Using common formative assessment, the teachers utilize the same criteria and same instruments to evaluate the work of the students.

The benefits of common formative assessment are outlined by Bailey and Jakicic (2012) as promoting efficiency for teachers, as well as equity for students. It also informs teachers on how to teach the curriculum and how students learn the curriculum through individual teacher practice. It builds a team that systematically looks at student work and identifies the strengths and weakness the students have with learning the curriculum, and, finally, it is a tool that changes adult practice and behavior in the classroom. A fundamental point of instruction is to be

focused and precise and build upon what students already know and to take them to the next level (Fullan, Hill, & Crévola, 2006). Teachers do many things during a day in the classroom, but the most critical is to design and organize instruction that is focused and designed for students. Teachers need to know the gaps in teaching and learning that students experience daily (Fullan et al., 2006). This is why common formative assessment is so important, because it is data that are analyzed automatically and converted into information to be used in tomorrow's instruction, not for lessons in the future (Fullan et al., 2006).

How is this work done?; What are the guiding forces of the teacher teams that assist in creating common formative assessment? Bailey and Jakicic (2012) discussed four guiding questions that teachers need to answer while they work to create common formative assessments. The first is what skill set does every student need to acquire as a result of this unit of study? The next is how does a teacher know if the student learned this skill set? What will the teacher do next if the student did not acquire this skill set? Finally, how will teachers extend or enrich the learning for students who have acquired the skill set (Popham, 2008).

The major purpose of this chapter discussed the research that examines the relationship between English Language Arts teacher team-generated common formative assessment and its impact on the academic achievement of middle school students.

Related Studies

This section addresses the studies relative to the topic of this research. It is divided into two key areas of the study: collaborative teacher teams and common formative assessment. It is designed to answer the following research questions defined in Chapter 1.

1. To what extent does participation in a collaborative teacher team influence the creation of common formative assessments?

2. How does teacher perception of collaborative teacher teams influence their work in curriculum building?
3. To what extent do these common formative assessments created in collaborative teacher teams affect student achievement?

Collaborative teacher teams. Brown and Knowles (2007) described teams as a vital component in any middle school design and structure. This section delineates studies that discuss the concept of collaborative teacher teams in the middle school.

Fullan (2002) further described the need for teaming in school because information can only become knowledge if it is discussed through dialogue and then meaning is made. Also, engaging in grouping with discussion between teachers can assist them in creating dialogue and discussion in their classrooms. Fullan further discussed the composition of teacher teams as a place that will present teachers with task and challenges. They can only experience success if they are in a safe, intellectuality stimulated environment and the endorphins are activated.

School improvement has many times been aligned with teacher collaboration and professional learning communities (McClure, 2008). Early research was conducted by Southwest Educational Development Laboratory on collaborative teacher teams (Hord & Sommers, 2008). In 1998, a study began in Cottonwood Creek School. Cottonwood is located in the Southwest. The demographics are a Hispanic population of low socioeconomic status. The school leader at the time was not engaging and conducted business daily same as usual, which resulted in low staff morale and low student performance scoring in the lowest quartile of the district. In 2008, a new principal arrived who began the work of building a community of learners to improve the morale and student academic performance. This new principal established time for the teachers to collaborate and learn in an environment that was supportive and engaging to both student and

staff. In 2013, after five years of building a collaborative environment, the students had moved to the top quartile in the district. At the conclusion of this study, another principal came to lead the school. This school leader gave no attention to the structures and systems for collaboration.

The staff did not have the time to learn and plan together; therefore, the student work was affected and the student scores began to drop from the top quartile. This study points to an important finding: That teacher learning and collaboration are linked to student achievement (Hord & Sommers, 2008).

Educators will agree that a school that has strong teaching teams, offers a huge benefit to students in both academic and social proficiency (Hopkins, 2017). Hopkins (2017) cited schools that have demonstrated academic growth as a result of teacher teaming. In Rahway, New Jersey, a study of student academic performance was done by monitoring student academic progress for three years. At the beginning of the study, teacher teams were just forming and analyzing student work. Goals were examined each year and instruction was adjusted, resulting in growth each year in student performance (Hopkins, 2017). At the conclusion of the three years, and after teacher teams were established, the scores of the students on statewide testing grew.

A study was conducted in Ontario in 2013, that focused on the positive effects of collaborative teacher teams and their effect on successful schools. The study was conducted by Leskiw-Janvary, Oakes, and Waler and the results found that collaborative teacher teams used an inquiry method to research student work, and it created a focus on best practice and how to develop these best practices. It also assisted with the creation of collegial relationships among staff, reflection, accountability, increased leadership among teachers, and the creation of a school-wide instructional focus (Fullan & Quinn, 2016).

During the same time period of 2013, the State of New Hampshire was seeking a system or structure that moved the focus from compliance of educational policies to structures that served the needs of the students (Fullan & Quinn, 2016). The State Education Department of New Hampshire designed professional learning teams and networks throughout the districts. This structure gave school teams an opportunity to collaborate not only with individual school teams but across schools throughout the district (Fullan & Quinn, 2016). This work developed a prototype for collaboration and the work of teacher teams. This study designed a cohesive language throughout the districts in New Hampshire and the state education department is awaiting the results of this state test so that the impact on student achievement can be analyzed (Fullan & Quinn, 2016).

Leana (2011) described a study done in New York City observing teachers who worked in collaborative teacher teams and teachers who did not. This study was conducted observing math teacher teams and their collaborative work. The teachers described this process as important work, done well, needs to be done collaboratively, and never in isolation. It confirmed that the students who performed above the norm were taught by teachers who worked in math teacher teams and interacted with their peers on a regular basis (Leana, 2011).

Leveraging the work of teacher teams to enhance student achievement was further analyzed by Eskolta School Research and Design (Furer, Kleinman, & Rothan, 2017) through the study of teacher teams in New York City. Throughout a one-year period, teacher teams in a New York City School District were observed on the elementary, middle, and high school levels. These teams began this collaboration and, through their work, could align their classroom work to the needs of their students and the focus of the school goals (Gleason, 2017).

These teams met weekly on the school level but monthly on the district level, which is in line with the prior Leana (2011) study that outlines the goal for these teacher team across the district to meet monthly to collaborate and share a district vision and practice.

Additional studies were done in Miami-Dade Public Schools beginning in 2010 and concluding in 2012. This study was conducted by Farmer, McQueen, and Grissom (Killion, 2015). The study examined the structure of collaborative teacher teams on the urban setting, the teachers' perception of these teams, the variation of teams and the quality of these teams, and their effect on student achievement. The methodology employed surveys, test scores, observations, and school indicators making casual inferences about collaboration and its effect on student achievement (Killion, 2015). The results indicated that schools that have instructional teams engaged in collaboration have high gains in student achievement in both math and reading. Also, the results indicated that all teachers benefit from teacher team collaboration even if they do not participate in the teacher team (Killion, 2015).

Vootg et al. (2016) examined 14 doctoral studies, analyzing the impact of collaboration on student achievement. These studies specifically investigated three common elements: the effect of collaboration, the mechanism of collaborative teacher teams, and the conditions under which the teams were designed. The methodology of examining these 14 research projects was a qualitative research strategy. The general conclusion was that collaborative teams help teachers in developing their pedagogy, which impacts student achievement. The three areas scrutinized throughout these studies' results found that teacher team collaboration creates a common language for teachers to use in their practice that results in higher student academic achievement (Vootg et al., 2016).

The public schools in Miami-Dade County, Florida were the subject of yet another study on the effects of teacher collaboration in instructional teams and its impact on student achievement (Killion, 2015). This study was conducted throughout a two-year period at 336 schools and included 9,000 teachers. Teacher surveys, test scores, and teacher team observations were the methods used to explore this topic. While different teacher teams had different configurations of team members subject and grade levels, all demonstrated an average quality of collaboration, also demonstrated gains in student achievement in the areas of math and reading (Killion, 2015). Additional findings revealed that teacher practice improved through collaboration and, as a result, district policy included time for teachers to collaborate in instructional teams during their school day (Killion, 2015).

Roberts (2004) also conducted a study on teacher teams. This research was built upon teacher perception of teacher teams and its impact on student academic achievement. The subjects were 247 educators with experience ranging from one year to 31 years; however, the majority of the subjects had one to 10 years' teaching experience as well as a Master's degree in Education. The study was conducted through surveys, observations of teacher team meetings, as well as examination of student data on Criteria Reference Test in English Language Arts and Mathematics. The conclusion of this study was that students' academic achievement increased throughout five years in the classrooms where teachers participated in teacher teams and, through their responses on the study surveys, teachers believed in the power of teacher collaboration to increase student achievement. The students studied were in a Midwestern School District in Grades 4, 8, and 12. The indication at the end of the study was that more research needed to examine teacher teams and their impact on student academic achievement (Roberts, 2004).

The New Teachers' Center at Santa Cruz conducted a study of effective techniques used in schools to improve student achievement (Ingersoll, Sirinides, & Dougherty, 2018). This study was conducted from 2010–2015 in 25,000 public schools across 16 states, surveying 900,000 teachers. The survey design was on a 4-point rubric with 1 indicating strongly disagree, 2 disagree, 3 agree, and 4 strongly agree. Eleven key elements, including trust among staff members, a shared vision, and elements to improve schools were identified as a few of the key elements. Of the 11 elements, there were eight that were designed strictly for teachers. They included questions surrounding decision making, design of instruction, creating grading and assessment protocols, and designing professional development. The result of the survey included the schools with the highest ratings of eight elements and had the highest Math and ELA scores. Included in these schools were 49% of the staff who designed teaching techniques collaboratively, and also designed grading and assessment techniques. Moreover, the data indicated that the elements with the following scores had the highest result for student performance: Planning 37% strongly agree, material creation or purchase 36% strongly agree, assessment 47% strongly agree, and designing teacher technique collaboratively 49% strongly agree. In summary, it was determined that the degree of both instructional leadership and teacher collaboration were related to high student academic performance (Ingersoll et al., 2018).

The above studies, in addition to the data collected during this research, address the following question: How does teacher perception of collaborative teacher teams influence their work?

Formative assessment. Assessment is a process as well as a product, a tool used to determine if the student has learned from the instruction (Reeves, 2009). Student learning can be manifested either through an answer to a question verbally or written, or when they use this

newfound information to create an essay, or answer questions or test questions either teacher made or standard (Reeves, 2009). Assessment application depends on the purpose, it can either be diagnostic, formative, summative, or program assessment (Reeves, 2009). For the purpose of this research, formative assessment is discussed citing studies already performed, as well as the work discussed through this study. The purpose of this study is to identify the relationships among English Language Arts teacher teams, their collaboration in creating common formative assessment, and its impact on the academic achievement of middle school students.

Formative assessment differs from other assessments in that it both students and teachers use the data generated by this assessment to shape further instruction and learning (Reeves, 2009). This research further examines the concept of common formative assessment. Common refers to those assessments designed by a teacher team and administered to students studying the same content on the same grade level. These teachers use the same criteria and tools to assess their students' work (Bailey & Jakicic, 2012). Bailey and Jakicic (2012) further discussed that if formative assessment is to be effective, there needs to be a dialogue between student and teacher to improve teacher practice and student achievement. The next conversation teacher teams need to engage in is if formative assessment is a tool that should be used in their teams and subsequently in their classrooms. Popham (2008) argued that formative assessment is a research data-free tool that can benefit both student and teacher.

When properly implemented, formative assessment will improve student achievement, which also improves teacher performance. The educational research examined the variables of students and teacher instruction. If the teacher engages in a particular pattern of instruction, a particular result will occur in student learning. The proof of the probability is the research result (Popham, 2008).

Formative assessment is a tool that spans across all levels of the educational system. Jones (2015) studied the value of formative assessment on the middle school level. In the state of Georgia, 800 middle school students, along with their teachers, were observed using formative assessment as a tool that could affect student achievement. Teacher lesson plans, along with classroom observations, were examined throughout this study. Teacher experience was examined as a variable of this study; 61% of all teachers observed had six years or more teaching experience. The teachers who taught Grade 8 demonstrated the most powerful data indicating high frequency of use of formative assessment. Also, the teachers who participated in professional development in the area of formative assessment had a high frequency of use of formative assessment. The results of the use of formative assessment in these middle school classrooms increased student engagement, resulting in growth in academic performance. As a result of these findings, Jones (2015) indicated additional study on professional development and student achievement needed to be examined.

Black and William began studies on formative assessment when they performed research to support the theory on how educators could raise the standard of education. They began their study by examining the academic performance of 838, 5-year-old students whose teachers were divided into two groups: Experimental—teachers trained in formative assessment, and the control group—teachers not trained in formative assessment. Students were given a pre- and posttest in reading, mathematics, and science. The results of the posttest indicated that the experimental teachers' students made significant gains. They concluded in their study, that formative assessment is the most effective educational practice that has a positive influence on improving students' academic performance (Marzano, 2006).

Kingston and Nash (2011) conducted a review of many studies conducted on the effect of formative assessment on K-12 student achievement. Their investigation analyzed the methodology and concluded that more studies need to be conducted in this area. The four criteria that Kingston and Nash (2011) used to analyze these studies were: (a) formative assessment is useful in as an intervention tool; (b) inclusion Grades K-12 is appropriate, but the number of students needs to be significant; (c) the design of the studies is a single-group design; and (d) studies must include one quantitative measure. Once Kingston and Nash (2011) concluded their research, they suggested that any conclusion based on this meta-analysis demonstrating the relationship between formative assessment and achievement was tentative at best. The recommendation of Kingston and Nash was that there needs to be more higher quality studies that include all aspects of formative assessment in order to declare clearly that there is a concrete relationship between formative assessment and student academic achievement.

Ateh (2015) conducted a study on formative assessment in Northern California analyzing the question used in two high school science classes as the basis of formative assessment. The questions were analyzed and the conclusion was that the teacher elicitations were of a low level and not a true example of formative assessment (Duckor & Holmberg, 2017).

Thum, Tarasawa, Hegedus, Yun, and Bowe (2015) conducted a two-year study on the effects of professional development in the area of formative assessment and students' academic achievement. This study was conducted in Meridian, Idaho in kindergarten through 10th grade. The teachers participated in professional development in the area of formative assessment and they were observed using the strategies and examining the student data as a result of implementation of the strategies. The results were positive in the areas of reading and mathematics, but the results were not conclusive. Throughout the study, students reported that

they knew what they were supposed to learn, knew how to learn, and were learning successfully throughout the duration of the study. In the classrooms involved in the study, it was observed that students had high levels of engagement (e.g., students increased involvement in classroom discussions, welcomed and acted on feedback) and this increased over time. Data revealed that the impact of formative assessment demonstrated a growth of 10 percentile points over the Springs of 2012 and 2013, but there was no noticeable growth in 2014. The conclusion of this study was that the work in formative assessment was a work in progress and more research and studies needed to be conducted to make a determination (Thum et al., 2015).

In 2001, Hoover High School in San Diego, California was part of a research project to examine the effects of school-wide implementation of formative assessment. It developed a four-step process: Step 1 developed a school-wide pacing calendar; Step 2 designed common assessment; Step 3 conducted an items skills analysis; and Step 4 adjusted instruction to meet the needs identified in the item's skills analysis. Using the California Standardized test to measure growth, it was demonstrated that after four years of utilizing the four-step process, the students grew from 28% proficiency to 51% proficiency. The school attributed this success to the precise teaching, instructional conversations, and item skills analysis that are all factors of formative assessment (Popham, 2008). The key to successful formative assessment implementation is that the teachers' take action as soon as the data are available to adjust instruction so that all students can experience success (Fisher, Grant, Frey, & Johnson, 2008).

Stewart (2011) conducted a qualitative single case study in Kentucky that involved 13 educators in middle school Grades 6–8 voluntary participation in professional development workshops on the topic of formative assessment. Of the participants, nine were content-area teachers of mathematics, reading, science, and social studies and the other four participants were

supervisors of the above teachers. These professional development workshops were conducted for eight weeks and at the conclusion of the eight weeks, the teachers began to use formative assessment in their classrooms. The teacher survey after the workshop demonstrated that their attitude toward formative assessment had changed and that they did see the need for this strategy in their classrooms in order to have a successful student outcome.

In conclusion, there was little growth on the Kentucky standardized test between the classroom teachers who successfully implemented formative assessment and the teachers who did not. Stewart (2011) suggested more research needed to be done in the area of formative assessment in the middle schools.

Goodwin and Hein (2016) reviewed a number of studies that examined student work and whether teachers take a deep dive into assessment or just skim the surface. They discovered that when teachers look deeply, have conversations with students about their work (formative assessment), and collaborate with peers, students are more successful in class. Goodwin and Hein further explained through analysis of various studies that three elements need to be present for a successful deep dive into student work. First, to be tough on them on practice to examine why are students missing the concepts presented. Second, focus on what the student is thinking, as this is a key element in successful formative assessment, and third, encourage self-reflection of the teacher, for example, how could I refine this lesson? These are key elements of formative assessment, as well as conversations between colleagues and conversation between students and teachers (Popham, 2008).

DuFour (2015) discussed the implementation of formative assessment in Muir Elementary School in Davis School District in Utah. Teacher teams in collaboration reviewed student work every eight weeks and adjusted instruction to meet the needs of students. Small-

group instruction was also implemented as a result of this data. This change with instructional practice was credited for an increase in student achievement in both reading and math.

The scores on the state reading test in 2014 were 65% of students demonstrating proficiency and in 2015 the proficiency levels were 83% and, in math, the growth throughout the same period of time was from 62% to 85%. These efforts and change in instruction demonstrated success utilizing formative assessment strategies (DuFour, 2015).

DuFour (2015) cited additional data to support the implementation of formative assessment when he studied the work of collaborative teacher teams in Sanger Unified School District in California. In 2004, the district began an initiative that created time for teacher teams to meet and create formative assessments and used this data to create interventions for its students and adjust individual and collective instructional teaching practices (DuFour, 2015). It took eight years for the results of the California Academic Performance Index to demonstrate a rise in scores. In 2012, the scores rose from 599 to 822, which is significantly above the state average, which is 788. In 2013, the districts' graduation rate was at 96%, which is 16% above the average in California (DuFour, 2015). Finally, state leaders and school leaders need to provide time for teachers to collaborate, reflect, and they also need to provide professional development in the area of formative assessment for elementary school teachers in private schools (DuFour, 2015).

Kline (2013) conducted a study in a middle school Grades 6, 7, and 8 in North Carolina to determine the effects of formative assessment on the North Carolina end-of-year reading and math assessment. The teachers were trained on the Online Formative Assessment program and students were grouped by three different cycles of formative assessment. The first cycle, titled the long cycle, only assessed students every four weeks to once a year. The second cycle, the

medium cycle, conducted assessments every one to four weeks, and the final cycle, the short cycle, assessed the students daily in math and reading.

The findings of this study demonstrated a strong correlation between formative assessment and student academic achievement (Kline, 2013). A significant gain was noted in the short cycle of formative assessment. The major findings of this study suggest that formative assessments are positively related to student achievement in reading and mathematics. Results suggested that short-cycle reading formative assessments, in particular, result in positive gains for students in reading. Both student and school-level, short-cycle reading formative assessment frequency were suggested to have a positive effect on student achievement in reading and mathematics.

Anrig (2015) outlined studies conducted by the National Center for Educational Achievement in 2009. This group studied 26 public schools in five different states with high poverty, yet had students who made significant gains on state Science and Mathematics exams throughout a three-year period. The study disclosed the following elements consistently in all 26 schools. Administration and teachers worked closely to develop instructional materials, assessments, and teaching strategies. Teachers had time to collaborate and examine student work (formative assessment) and adjust instruction from this data find. The school community carefully monitored test data (formative assessment) to identify how instruction needed to be adjusted (Anrig, 2015).

Moyosore (2015) conducted a study on formative assessment and its effect on students' academic achievement in the secondary school in Mathematics. This experimental research design investigated 120 secondary students in Nigeria exposed to formative assessment in comparison to students who were not in classes that utilized formative assessment. The study

investigated the effect of formative assessment on students' achievement in secondary school Mathematics. Data were analyzed using paired sample *t*-test and independent sample *t*-test statistical tools.

Findings from the analysis revealed that formative assessment has a strong significant difference in the mean achievement score of Mathematics students who are exposed to it ($t = 36.54, p = 0.000$), while there is no significant difference in the mean achievement scores of students who are not exposed to formative assessment ($t = 2.053, p = 0.045$). The study recommended that schools should emphasize the use of formative assessment by all teachers and encourage and provide incentives for them to attend seminars, workshops, conferences, and in-services training to enhance their performance and to acquire necessary skills to constructing formative tests (Moyosore, 2015).

Formative assessment is a process that engages students and teachers in gathering evidence and using this evidence to assist in the teaching and learning process (Popham, 2008). Studies have been performed in elementary schools across the country examining the impact of formative assessment on students' academic performance. Klute, Aptharp, Harlacher, and Reale (2017) conducted 22 studies in private elementary schools. The results of these studies indicated that formative assessment had a positive effect on student outcomes. The agents of formative assessment were either student directed, teacher directed, or computer generated. The results in the subject matter of mathematics were positive when all three agents were used (student, teacher, computer). The results in the area of English Language Arts favored the use of teacher-to-student formative assessment over student-to-student or a computer-generated assessment format. Additional findings indicated that teachers' understanding of formative assessment varies across private elementary schools and communities. A focus across communities should be on

professional development in the area of formative assessment (Klute et al., 2017). Another finding was that participating in classrooms that utilized formative assessment had positive effects on students' learning results. The extent of student effect also depends on the subject area taught and the teachers' understanding of formative assessment (Klute et al., 2017).

Vincent (2016) conducted an additional study in private elementary schools on formative assessment and found six elements that either hindered or fostered the successful use of formative assessment. Barriers such as unit plans, pacing calendars, and teachers' guides influenced teachers in successfully using formative assessment in their classrooms. The use of technology was beneficial when students were working independently. Formative assessment was essential to the high quality of education. Finally, state leaders and school leaders needed to provide time for teachers to collaborate, reflect, and provide professional development in the area of formative assessment for elementary school teachers in private schools.

Feedback is a key component of formative assessment (Brookhart, 2008). Through feedback, formative assessment gives information to the teacher as well as guiding students through instruction. This guidance discussed through feedback conversations assists students in knowing how they can obtain the knowledge they need in order to reach their learning targets (Brookhart, 2008). The research on feedback dates back more than 100 years with studies in behaviorism. Positive feedback was considered positive reinforcement and negative feedback was considered punishment (Brookhart, 2008). Recent studies have been developed to include feedback in classrooms in relation to formative assessment. Shute (2007) conducted a study for Educational Testing Services, examining the link between feedback and formative assessment. This body of research defined feedback as information provided to the learner to adjust the learners' behavior and thinking so that the learner can achieve academic success. Shute (2007)

further developed the concept of feedback in formative assessment as nonjudgmental, supportive, timely, frequent, and specific.

Samuels and Wu (2003) further studied feedback in relation to assessment by researching the effects of delayed feedback in comparison to immediate feedback. Their research included 67 third and fifth grade students, divided into two groups: 39 students received delayed feedback and 28 received immediate feedback. Samuels and Wu examined the results of the Standardized Test of Assessment of Reading of both groups and found that the immediate feedback group performed 20% higher than the delayed group on the Standardized Test of Assessment of Reading.

A study was performed at Columbia University by Timperly and Hattie (2007) to examine the three key questions used in feedback so that assessment was clear and defined. The questions are:

1. Where am I going?
2. How am I going?
3. Where to next?

Timperly and Hattie (2007) studied classroom teachers assisting students through feedback in answering these questions and how the answers to these questions could provide data for formative assessment to teachers.

Schugel (2016) conducted a study in the Midwest United States, in two junior high school Algebra 9 classrooms. The purpose of the study was to investigate the effects of frequent formative assessment utilizing daily feedback. The research took place throughout four weeks with 58 participants. The participants completed a check in form at the beginning and end of each unit, three to five daily quizzes each week, and also participated in a group discussion at the

end of the unit. The researcher provided feedback and kept a journal with observations. The data sources were analyzed and the researcher found students who took daily quizzes outperformed those who did not. The indication of this study recommends that daily quizzes are utilized in classroom (Schugel, 2016).

The above studies, along with the data collected throughout this research, attempt to answer the following questions: To what extent does participation in a collaborative teacher team influence the creation of common formative assessments?; How does teacher perception of collaborative teacher teams influence their work?; and To what extent do these common formative assessments create in collaborative teacher teams effect student achievement?

Summary

The foundation of good teaching is having the knowledge of what the students are thinking and feeling. The skillful teachers' decisions on content, framing the assignment, and assessment are guided by an awareness of how students are experiencing learning in the classroom (Brookfield, 2015). To increase and maintain a laser-like focus on student academic achievement, teachers need to collaborate in backward planning of curriculum units, analyze formative assessment, and share best practice and strategies (Marshall, 2016).

Increasing educational achievement is a national economic priority, and the only way to do this is to improve the quality of teaching and learning. Evaluation has a direct correlation to the teaching and learning that takes place in the classroom during daily instruction, which includes daily assessment (William, 2018).

Not all students have the same understanding of what the outcome of a lesson is, as their teacher. As long as teachers vary their styles in a classroom, some students will experience success. Studies and research have examined student understanding in a classroom, but the

question is ever present: How we increase student understanding to include understanding for all students (William, 2018)?

The studies in this chapter discussed the importance of teacher collaboration in analyzing student work and using data collected from formative assessment to inform their (teachers) instructional strategies. One of the consistent findings of teacher collaboration is a commitment to improving student success and confidence in their ability to support student learning (Langer et al., 2003). The common thread throughout these studies discussed, along with a growing body of research, demonstrate that collaboration between teachers improves student outcomes (Anrig, 2015).

Collaboration among peers leads to an opportunity for peer learning and a means for teachers to build a collective expertise. This collaboration is successful when expertise is shared and all teachers have the ability to perfect their craft. This includes the analysis of pedagogy, curriculum content, student work, and assessment (Marshall, 2016).

DuFour and Fullan (2013) discussed the importance of keeping a culture of priority in a collaborative team and always adjusting the priority to meet the needs the of the students. The team must focus on core goals and priorities and, for the purpose of this study, the priority is formative assessment.

This chapter discussed two research topics in education: teacher collaboration and teacher collaboration in creating common formative assessment.

The studies in this chapter attempted to answer the following questions: To what extent does participation in a collaborative teacher team influence the creation of common formative assessments?; How does teacher perception of collaborative teacher teams influence their work in curriculum building?; and To what extent do these common formative assessments created in

collaborative teacher teams effect student achievement? These questions are further developed through throughout the study that unfolds in the next few chapters of this research.

Chapter 3

Methodology

Reeves (2011) described teaching as a performance utilizing a script and the script does leave room for improvisation. However, even with the improvisation, there are times when this script does not produce learning for all students in the class. This inability to provide learning for all students is the basis for the inquiry that motivated the research into teacher collaboration in creating formative assessment in the middle school in order to increase student academic performance.

The purpose of this study is to identify the relationships among English Language Arts teacher teams, their collaboration in creating formative assessment, and its impact on the academic achievement of middle school students. The setting of this study was two urban private Nursery through Grade 8 elementary schools in one New York City district. School 1 had 206 students: 4% of the student population are Asian, 68% Black, 8% Hispanic, and 20% White, and 2% are students with disabilities. School 2 had 387 students: 95% Black, 5% White, and 2% student with disabilities. The subject of the study was English Arts middle school teacher teams of which 95% of the teaching staff taught three years or more, how they use common formative assessment, and its effect on the academic achievement of middle school English Language Arts students (Diocese of Brooklyn—Catholic School Support Services, 2018).

The teacher team structure has shifted the work from a merely casual discussion of student products to a close examination of student daily performance and planning for all students (Sparks, 2005). The focus of this study analyzed the work of an English Language Arts teacher team in planning lessons for its students utilizing formative assessment and how this collaboration influences academic achievement. The collection of data included observation

notes from teacher team meetings, surveys completed by the teachers, and the formative assessment data of the middle school students.

The purpose of this study identified the relationship to the planning done collaboratively by middle school English Language Arts teacher teams when analyzing formative assessment, and its impact on academic achievement of middle school student. This work is in line with a law passed in 2015 that described schools needing to adopt a reform plan that would increase academic performance (Huetteman, 2015). These teacher teams, as described by Sterrett (2016), are considered an innovation of school reform. They work collaboratively in communities to improve student academic performance (Sterrett, 2016).

According to the National Education Association (2017), only 38% of all students nationally in Grades 3–12 were proficient in English Language Arts. This is a little more than one third of the student population; something needs to be done. Previous studies in this area have been done with collaborative teacher teams and students.

Gusky (2003) discussed the need for informal assessment in the classroom as a second chance for students to give them an opportunity to experience success and growth in learning. Smitt (2006) discussed the impact of teachers' common planning on student academic performance in middle schools in the State of Texas.

Jones (2015) analyzed the relationship between formative assessment in middle schools and the causal factors of leadership and coaches. This study expanded the work of Smitt (2006) by analyzing the effect of informal assessment on the collaboration and lesson planning, and its effect on middle school students' academic achievement. There is a need to know if this collaboration can give students a successful second chance at learning.

The design for this study was a mixed-method research design, which gathers both quantitative as well as qualitative data to answer the research questions. The research included observations, interviews, small samples of lesson plans, and standard assessment tools (*t*-test; Roberts, 2004). Other studies have discussed collaboration, formative assessment, and curriculum design (Voogt et al., 2016). This study examined the collaboration in creating common formative assessment and its effect on student academic achievement. The reason for the selection of a mixed-method design is because both qualitative as well as quantitative data were needed for this research study. The elements of this study included, but are not limited to, a narrative, holistic setting, as well as experimental design and testing of a hypothesis (Roberts, 2004). Schools can easily gather data from classrooms, department meetings, student data, and teacher and school demographics (Roberts, 2004).

Description of Methodology

This mixed-method research design examined the correlation between teacher collaboration in creating formative assessment and student academic achievement in the area of English Language Arts in two Nursery through Grade 8 schools in a New York City school district. This study compared the reading performance data from the student population in Grade 6, between teachers in one school who participated in collaborative teacher teams and, in the second school, with teachers who did not participate in collaborative teacher teams.

The researcher used a holistic, natural approach, which included observations, surveys, interviews, and assessments created by teachers as well as standard assessments (*t*-test) in a natural, real-world setting, the classroom, and teacher team meetings. A mixed-method design is a multimethod approach. The researcher's study was in a natural setting, and the events were interpreted, giving meaning to this research. The researcher used a variety of methods in order to

conduct the study (Roberts, 2004). In this case, it was classroom observations and teacher team meeting surveys and observations. Research can only be successfully analyzed if the researcher is immersed in the field. It is an interactive process where the researcher learns directly from the subjects through observations as well as surveys. This close interaction allows the researcher to gain insight into the topic to be studied. Combining quantitative (the what) of a research project along with qualitative (the why) of a research project adds power and full explanations of the data collected. Through quantitative research, large amounts of data are collected, but the qualitative techniques tell the story. This design focused on an organizational process in conjunction with examining the nature of events (Roberts, 2004).

The nature in this particular study was the collaborative teacher team meetings, which are examples of an ethnography design that portrays a group of people and the culture that makes them unique (Privitera & Ahlgrim-Delzell, 2019). The activities that resulted in the creation of common formative assessment were examples of a grounded theory design of study, which enhanced the existing studies on formative assessment (Privitera & Ahlgrim-Delzell, 2019).

An embedded design method was utilized for this study, as quantitative as well as qualitative data are collected simultaneously in order to support each other (Creswell, 2009). Another reason for this choice was that in this study, it was difficult to determine which factor caused a change to another factor. Instead, it was to determine the extent to which both factors were related (Lodico, Spaulding, & Voegtle, 2010). The first was teacher teams creating common assessment and the second was its effect on student academic achievement. The measured value can be large or small, as determined by the researcher and the study. Data were collected randomly. The teachers who completed the survey were 40 randomly selected nursery through Grade 8 teachers. The other random component was that the classrooms observed were

only teachers and students who agreed to participate in the study. The data were also collected throughout a two-and-half-week period, which was one point in time during the study. All data were collected individually for each member of the teacher team through their survey responses, and for the students' individual academic data. These data were examined using statistical tests that explained how the variables were related. This correlation design was an example of a prediction model (Privitera & Ahlgrim-Dezell, 2019).

The effects of this study answered the question: Do teacher teams' work in creating formative assessment affect the academic performance of sixth grade English Language Arts students?

Design of the Study

The design of the study was in line with the steps outlined by action research step one: selecting a focus (Sagor, 2000). For this research, the focus was the creation of formative assessment and its effect on the achievement of sixth grade students in the area of English Language Arts.

This research began with a literature review of both teacher teams and common formative assessment, which is step two in action research: clarifying theories (Sagor, 2000). The review of the literature that included, but was not limited to, studies performed by authors such as Popham, William, and DuFour, to name a few, discussed the importance of collaboration and formative assessment. Along with the expert authors in the field, scholarly works of doctoral students was reviewed. This review of the literature is key in such a study because there needs to be a correlation between theory and practice. This review assisted in developing the research questions, which is step three in action research (Sagor, 2000).

Next, an application to William Howard Taft University Education Institutional Review Board to secure approval began the research. Upon approval, the researcher identified two private schools in New York City with similar demographics and contacted both school leaders to discuss the possibility of conducting research in their schools.

Finally, when all of this preapproval data was collected, they were sent to William Howard Taft University's dissertation committee in order to proceed with the study.

Once, the dissertation committee approved this study, the samples for the study were identified. This was the beginning of step four in action research, which is to collect data, all data (Sagor, 2000).

Two sample groups of sixth grade middle school students were selected from a pool of approximately 60 students. All 60 students were given an initial baseline English Language Arts test created by English Language Arts teachers. The first group selected comprised students who were taught by teachers who engaged in team teacher teams to create formative assessment. The second group selected comprised students who are taught by teachers who did not engage in team teacher teams to create formative assessment. Upon identification of these two groups, a series of observations took place in these classrooms, focusing on how instruction was or was not adjusted in accordance with formative assessment.

Observations in a classroom uncovers the difference in how students can process learning and at what rate this learning takes place (Clay, 2007). A qualitative observation is a description that occurs in the natural setting of the classroom and the teacher team meetings. These observations occur throughout a period of time, with the researcher taking notes to record the events of the observation. These field notes are divided into two parts: the original notes that

answer the questions of who, what, where, and when; and the reflection part where the researcher reflects on why and how (Privitera & Ahlgrim-Dezell, 2019).

The researcher then gave the teacher team members a survey to establish their past experience with teacher team meetings. Survey research design is a questionnaire that is used to quantify, describe, or characterize the opinion or experience of a person, or a group of people, in this case the English Language Arts teacher team members.

A cross-sectional survey was administered just once to examine the different opinions on the participants' past experience with teacher team meetings (Privitera & Ahlgrim-Dezell, 2019).

Surveys are utilized many times to assess the professional development needs of teachers. If the surveys are anonymous, then the teachers will respond honestly to the questions. The purpose of surveys, as discussed by Clark and Duggins (2014), was to improve professional development. Whereas, the purpose of the survey in this study was to establish the extent to which the participants in this study had experience with being a member of a teacher team and the success of this team (Clark & Duggins, 2014).

The researcher simultaneously observed the English Language Arts teacher teams of both groups of teachers. Teacher teams are developing in schools to address instructional approaches, as well as curriculum design and decision making. Teams increase peer relationships, enhance social competencies, and sharpen problem-solving skills, since the teams are small and focused upon one key element in education. In this case, the teacher teams analyzed and adjusted their instruction in alignment with the common formative assessment (Jennings, 2007). Teachers are the ones implementing new reforms and ideas; they're often the only ones who can see both their students and the problems with learning clearly enough to imagine solutions. These are the topics

that are at the basis of teacher team meetings, and teachers are the only ones who know what their students need (Barth, 2013). The researcher sought to find a team that addressed challenges of all students and searched to discover solutions to these challenges (Boudett & City, 2014). These meetings need to be grounded in the question: Is an adjustment needed in instruction and if so, what adjustment is needed (Popham, 2008)?

Once the observations of both classroom teaching and teacher teams' meetings were concluded, approximately during a two-week span of time, a benchmark English Language Arts exam was administered. These data were gathered and examined to ensure that they were in proper format for this research design. The data points used in this study were a baseline English Language Arts examine and the end-term benchmark English Language Arts examine. The lens through which these data were examined was in the form of the following research question:

1. To what extent does participation in a collaborative teacher team influence the creation of common formative assessments?
2. How does teacher perception of collaborative teacher teams influence their work in curriculum building?
3. To what extent do these common formative assessments, created in collaborative teacher teams, affect student achievement?

The next step in this process was to conduct a *t*-test to compare the English Language Arts scores of students who were taught by teachers who worked collaboratively and students who were taught by teachers who did not participate in collaborative teacher teams. The *t*-test was used because it demonstrates a ratio between two groups. The larger the score between the two groups, the bigger the difference. This test is also used in qualitative research projects

(Sagor, 2000). These scores were collected from the baseline English Language Arts exams given in May 2019, and the end of year English Language Arts exam given in June 2019.

Sample and Population

The next step was to continue the data collection through identifying the sample and population. This is the fourth step, as identified in action research (Sagor, 2000). Sampling is the process of selecting a number of subjects for the study that represents the entire population. The selection is purposive sampling, because these two schools are in the same geographic district in New York City and are in line with the theory of the study: Can teacher teams create common formative assessment that impacts on student achievement? The students were randomly selected through consent forms completed by their guardian. The teacher team members were selected through criteria that they participate in English Language Arts teacher teams, and they teach sixth grade English Language Arts (Roberts, 2004). The sample utilized for this study consisted of middle school students enrolled within the New York City private schools, Brooklyn, New York, in Grade 6 during the academic year 2018–2019. These sample students were randomly selected. The first sample consisted of approximately 30 students who were taught by teachers who work collaboratively in teacher teams to create common formative assessment. The second sample consisted of approximately 30 students who were taught by teachers who do not work in collaborative teacher teams to create common formative assessment.

Mixed-methods research began with an examination of the population at large, all sixth-grade students in two Nursery through Grade 8 schools in an urban district, and narrowed it down to a smaller manageable group on which the research was performed. The sampling for this study was a criterion-based sampling.

The research has a set criterion of students who were taught by teachers who participated in teacher teams and created common formative assessment, or were taught by teachers who did not participate in teacher teams that created common formative assessment (Privitera & Ahlgrim-Dezell, 2019). This strategy was selected for this particular study because it best fit the original three research questions:

1. To what extent does participation in a collaborative teacher team influence the creation of common formative assessments?
2. How does teacher perception of collaborative teacher teams influence their work in curriculum building?
3. To what extent do these common formative assessments created in collaborative teacher teams, affect student achievement?

New York City Public School District titled Diocese of Brooklyn comprised 84 elementary (nursery through Grade 8) schools spanning from the most southern tip of Queens, New York, to the most northern tip of Brooklyn, New York. The 20,000 students who attended these schools were a microcosmic community representing all ethnic groups that live in New York City collectively. The school populations were as diverse as the neighborhoods in which the students live (Diocese of Brooklyn, Portal, 2018).

Schools in the Diocese of Brooklyn are governed through either the academy structure or the school structure. The difference between the two systems are a school is governed by the parish pastor, principal, and teachers and staff. The academy is governed by a board of members, board of directors, principal, and teachers and staff, and they are usually are two of more local parish schools combined (Diocese of Brooklyn, Portal, 2018).

New York State is a Common Core state and all curriculum is developed within these guiding pillars of education. The New York State Education Department is also held to the federal law Every Student Succeeds Act and is in the process of petitioning the federal government for a waiver to better accommodate the needs of students in New York State Education Department (2018).

Under federal accountability for the 2016–2017 academic year, Catholic Brooklyn Diocese students in Grade 6 who obtained level 3 and 4 proficiency, outperformed other sixth grade students in New York State (see Table 1).

Table 1

Comparison of English Language Arts Test Scores Math Test Scores of New York State, New York City, and Diocese of Brooklyn Students, 2018

	NYS	NYC	Catholic Diocese of Brooklyn
ELA	32.4%	32.3%	38.0%
Math	39.8%	36.1%	34.4%

Instrumentation and Data Collection

Sagor (2000), in describing the steps taken in action research, discussed the data collection as an instructional decision upon which educators base their decisions. The researchers make sure that their actions are valid (representing what the researcher says it does). In this case, did the creation of common formative assessment impact the performance of sixth grade students in the area of English Language Arts? The data also needed to be reliable, meaning that the data were accurate in this study; the data being observations and surveys. These data were in line with

classroom instruction that affected the academic achievement of sixth grade English Language Arts students (Privitera & Ahlgrim-Dezell, 2019).

The first instrument was the teacher team survey questionnaire, which provided a logic to the researcher role and theory of action. The purpose of this survey was to describe the opinions of the teachers in this study and their experience with teacher teams. A cross-sectional survey was utilized because it was a survey administered in a specific time and place. These data were collected, interpreted, and presented in a narrative written report. The researcher examined the response rate, which explored the participants who agreed to take part in the survey to the participants who completed the survey. Once the surveys were completed, the researcher made a theoretical generalization in line with existing theories on common formative assessment (Privitera & Ahlgrim-Dezell, 2019).

The second instrument was the observation reports from both the classroom observations and teacher team observation notes.

Qualitative observation is a process of research that uses subjective methodologies to gather data. The qualitative observation involves the five major senses: sight, smell, touch, taste, and hearing. This study also involved numbers and the use of measurement tools (*t*-test). The observations took place in the subjects' natural environment (the classroom and teacher team meetings), and not in a lab or controlled environment. There are four different categories of observational research. In this particular study, the researcher was classified as an observer participant. An observer participant is one who is known and recognized by the subjects, but has little or no interaction with them and whose aim is to play a neutral role (Privitera & Ahlgrim-Dezell, 2019) These data were collected, interpreted, and presented in a narrative written report.

The final instrument was the Degree of Reading Power Inventory. This was a quick simple measure of literacy skills that measured a student's comprehension skills. Degree of Reading Power Inventory measures a student's overall ability to comprehend and critically interpret passages of text. The scores are precise, reliable indicators of students' reading comprehension. The scale score is 1–100 and these scores align to grade level. This test can be given as a baseline, benchmark, and end of year measuring tool (Questar, 2018). These data were analyzed using an independent *t*-test to compare the Degree of Reading Power Inventory scores of the control group and the study group.

Summary

The purpose of this chapter was to describe the mixed methodology utilized to find a direct correlation between teacher collaboration in creating formative assessment and student academic achievement in the area of English Language Arts in two nursery through Grade 8 schools (Grade 6) in a New York City School District. The research design of this study was as an action research study outlined in theory by Privitera and Ahlgrim-Dezell (2019) as reflection, planning, implementation, analysis, and results. In practice, according to Sagor (2000), it is selecting a focus, clarifying theories, identifying research questions, collecting data, analyzing data, reporting results, and taking informed action. The researcher utilized a variety of instruments to conduct this study. These data will answer the original research questions:

1. To what extent does participation in a collaborative teacher team influence the creation of common formative assessments?
2. How does teacher perception of collaborative teacher teams influence their work in curriculum building?

3. To what extent do these common formative assessments design in collaborative teacher teams, affect student achievement?

The results of these data are further developed in Chapters 4 and 5 of this research, and explain whether students who participate in classroom instruction that utilizes common formative assessment created by teacher teams are more successful in their academic achievement in the area of English Language Arts.

Chapter 4

Results and Discussion

Statements of theory in education are invaluable when they stand alone. Educational theories, in addition to observations, generate philosophies and theories upon which educational foundations are built (Privitera & Ahlgrim-DeLzell, 2019).

The purpose of this study is to provide research that supports the work of middle school English Language Arts teacher teams planning collaboratively using teacher-made common formative assessment and its result on the academic performance of middle school student. The design of the study is a mixed-method design because it utilizes both qualitative as well as quantitative research methods. The format included open-ended questions, surveys, interviews, observations, and *t*-test comparison of reading test scores. It also included studying people in the field in a natural setting using a multiple of research methods (Roberts, 2004). The design for this study is a mixed-method research design, which gathers both quantitative as well as qualitative data to answer the research questions. The research included observations, interviews, small samples of lesson plans, and standard assessment tools (*t*-test; Roberts, 2004). Other studies have discussed collaboration, formative assessment, and curriculum design (Voogt et al., 2016). This study examined the collaboration in creating common formative assessment and its effect on student academic achievement. The reason for the selection of mixed-methods is because both qualitative as well as quantitative data are needed for this research study.

The elements of this study included, but are not limited to, a narrative, holistic setting as well as experimental design, and testing of a hypothesis (Roberts, 2004). The results of this hypothesis are indicated by answering the following three research questions:

1. To what extent does participation in a collaborative teacher team influence the creation of common formative assessment?
2. How does teacher perception of collaborative teacher teams influence their work in curriculum building?
3. To what extent do these common formative assessments created in collaborative teacher teams affect student achievement?

Findings and Discussion

This chapter presents the study findings that are representative of the following questions:

To what extent does participation in a collaborative teacher team influence the creation of common formative assessment?

Through survey and observations of teacher team meetings, roles and norms were observed with the purpose being to increase student academic achievement. This purpose was accomplished utilizing different methods such as entrance and exit tickets, and mid-lesson stopping and reteaching the lesson in a different manner with further explanation of the task. This adjustment of instruction is an example of formative assessment because the teachers observed, as they interacted with small groups of students working on the task, that the task was not fully defined. The teams also designed a series of questions asking students what they found easy or challenging with the lesson and, if it were challenging, how could the teacher adjust the teaching to make the lesson understandable.

Brookhart and Moss (2019) defined formative assessment as an intentional learning process; the bridge between student and teacher that assists in improving the goal of student academic achievement. It is focused on this goal and involves adjustments to instruction to assist the student in achieving this goal. Through the questions, pairing of English Language Learners

with students who have strong English skills, as well as the reteach as observed during classroom instruction, teachers used formative assessment to assist the students with the learning process. This is a shift in the traditional teaching and learning model that, described by Popham (2008), was teacher directed with formal tests to collect data and assign grades. Formative assessment includes students in the teaching process, and informal assessment informs the adjustment of teacher's instruction to support student learning.

The second question answered represented by the tables below is: To what extent do these common formative assessments created in collaborative teacher teams affect student achievement?

This adjustment of instruction is an example of formative assessment because the teachers observed, as they interacted with small groups of students working on the task, that the task was not fully defined. The teams also designed a series of questions asking students what they found easy or challenging with the lesson and, if it were challenging, how could the teacher adjust the teaching to make the lesson understandable.

Even though it was observed during the meeting that teachers were creating common formative assessment questions to use during instruction, at times in the classroom, teachers adjusted instruction when they observed the students just did not understand the task at hand.

William (2018) discussed that teaching and learning revolve around three key components: where are the learners in the learning process, where is the learning going, and what tools they need to get there. Assessment is the bridge between teaching and learning, and formative assessment is the path taken on the bridge from where the learner is and how he or she will get there. Figure 1 illustrates the pre- and posttest scores of students on the test in the area of English Language Arts for School 1.

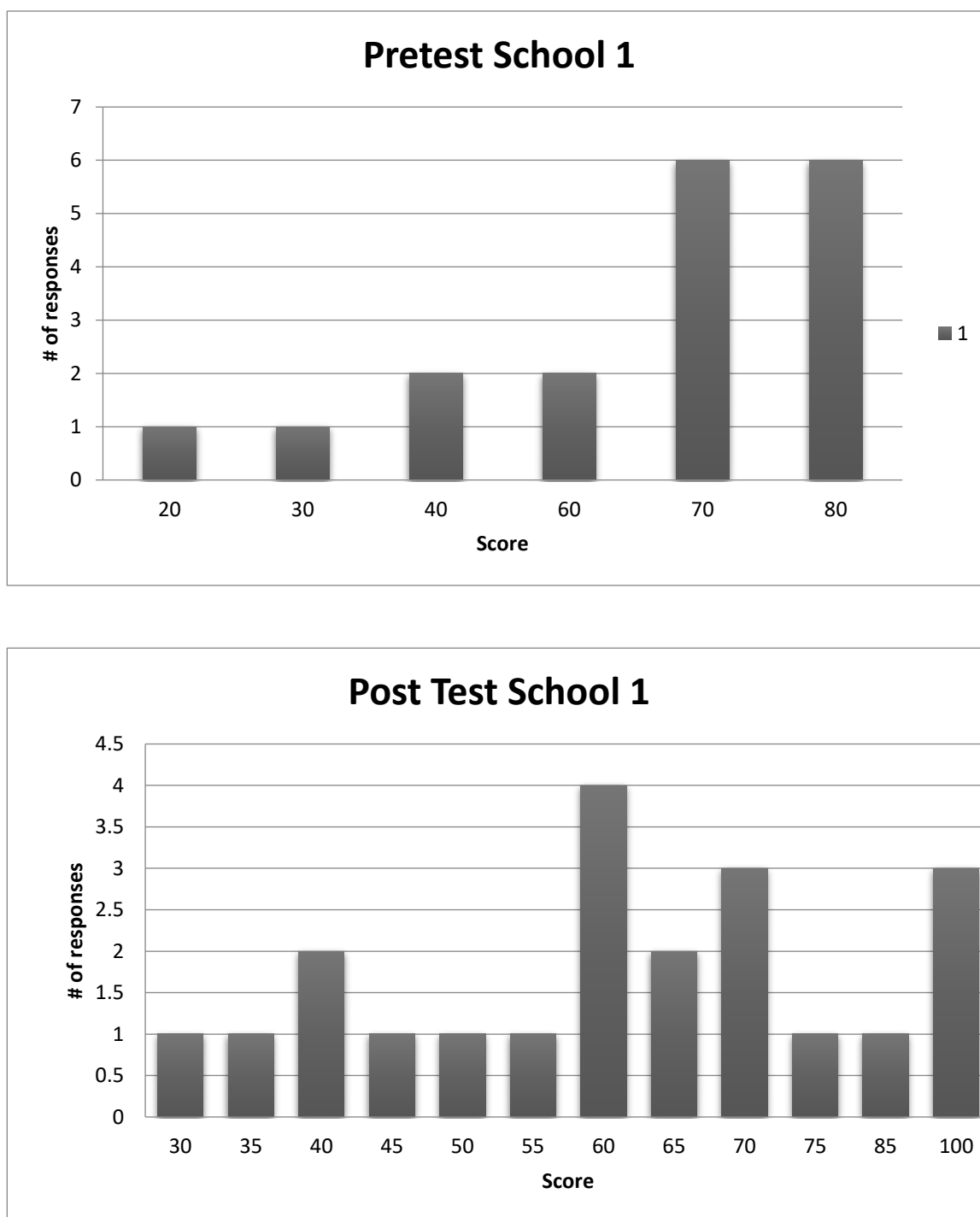


Figure 1. Pretest, posttest reading score School 1

Figure 2 illustrates the pre- and posttest scores of students on the test in the area of English Language Arts for School 2.

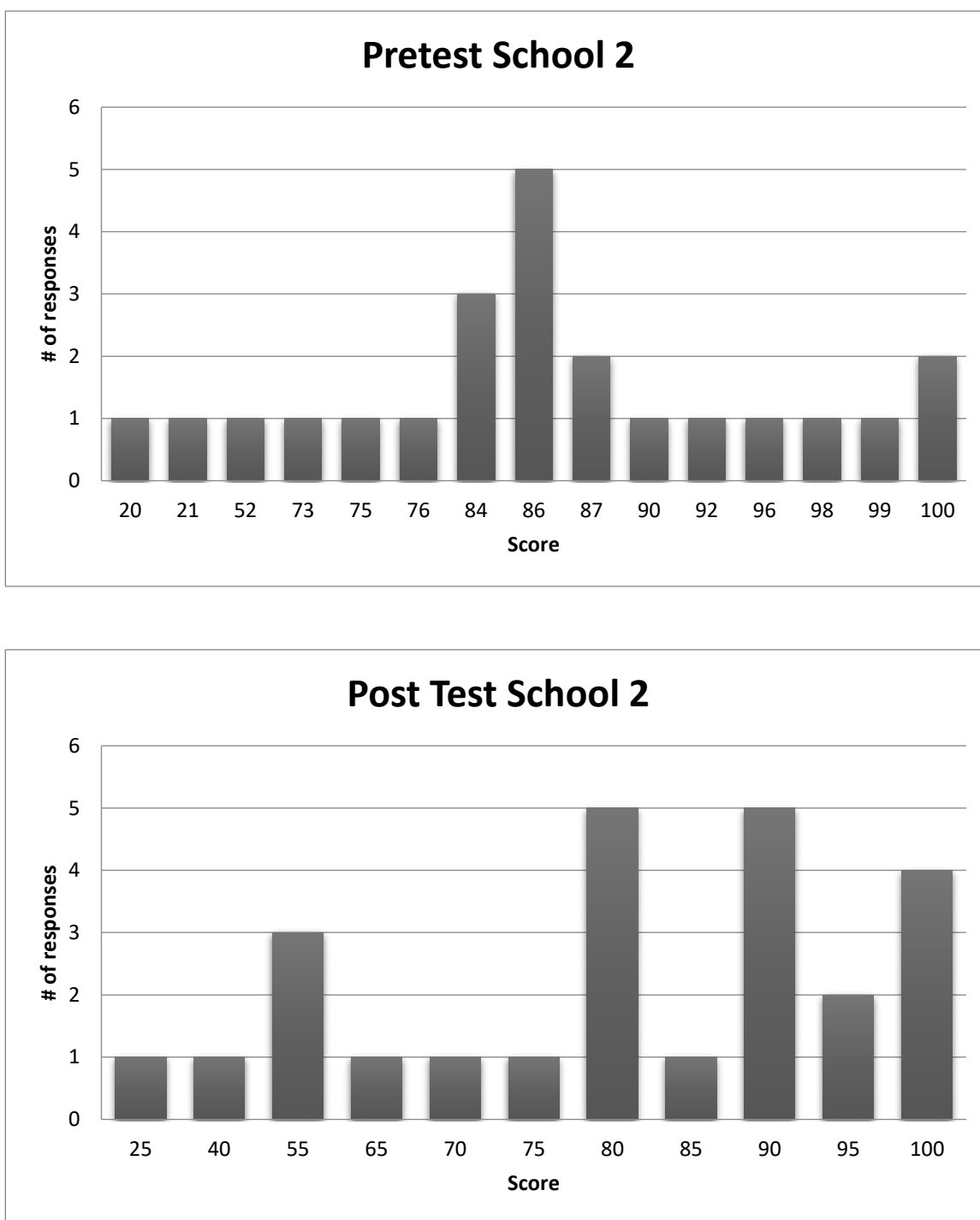


Figure 2. Pretest, posttest reading scores School 2

Table 2 illustrates the pre-test scores of both School 1 and School 2 on teacher made Reading Test.

Table 2

t-Test and Pretest Results

	School 1	School 2
Mean	68.18	80.09
<i>SD</i>	19.91	22.07
Structural Equation Modeling)	4.25	4.71
<i>N</i> (Sample Size)	22	22

Note. $t = -1.879$.

Table 3 illustrates the posttest scores of School 1 and School 2 using the Degrees of Reading Power Test.

Table 3

t-Test Posttest Results

	School 1	School 2
Mean	62.27	78.60
<i>SD</i>	20.92	19.77
Structural Equation Modeling	4.46	3.95
<i>N</i> (Sample Size)	22	25

Note. $t = -2.75$.

The purpose of this study is to identify the relationships among English Language Arts teacher teams and their collaboration in lesson planning, utilizing formative assessment, and its impact on the academic achievement of middle school students. The results, as illustrated in the

Tables 3 and Figures 1 and 2, indicate there is no significance between teachers who participate in collaborative teacher teams in creating formative assessment and the teachers who do not participate in teacher teams. The *SD* in School 1, which was composed of the teachers who participated in teacher teams and common planning, is 20.92 in comparison to School 2 that is 19.77, which is less than one point. Also, the mean posttest scores at School 1 were 62.27 and the scores of School 2 were 78.60. There was also a decline from pretest to the posttest.

What can account for these findings? Are teacher teams truly functional or do the teachers perception of these teams indicate they are functional? Venables (2019) discussed that teams fail to impact on student academic achievement because, according to the survey, the focus of their purpose would be on what to teach and when to teach it, instead of how. According to research, the how of teaching has the most impact on student achievement, which is one of the foundations of formative assessment. Venables further discussed that the logistics of the team structure that is established through scheduling, but not necessarily through need or design, is another component that is part of the inability of teams to function.

Kraft (2019) discussed that there are many reasons why teams do not accomplish their goals in this study creating common formative assessment that would impact upon student academic achievement. Some of the variables discussed are the inability to stay on task and remain within the time framework, and also, that norms included, but not limited to, starting on time, no side conversations, and no cell phones present during the meeting. Again, teacher perception of a meeting may be that it is scheduled but never starts on time, and maybe too many additional issues are brought to the table than the task at hand. Kraft (2019) recommended that at the beginning of the school year, that norms and goals are established for all meetings, in order to move instruction.

This survey is part of the mixed-method research model because it utilizes the survey that is qualitative and numerical results that are quantitative (Roberts, 2004). The following question is represented in Figure 3: How does teacher perception of collaborative teacher teams influence their work in curriculum building?

Figure 3 illustrates the results of the teachers' perception of teacher teams in the area of clarity of purpose, accountability, team structure, and trust.

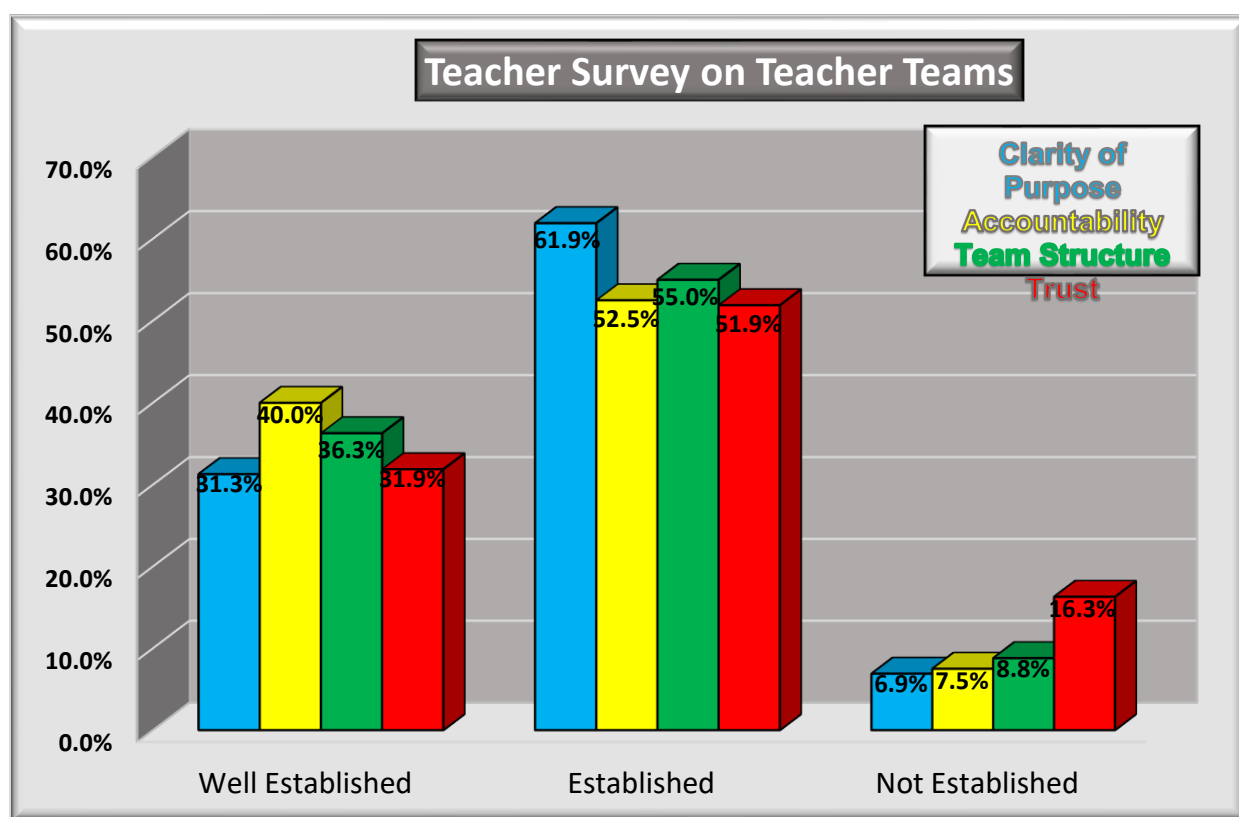


Figure 3. Teacher survey on teacher teams

Forty nursery school through Grade 8 teachers were randomly surveyed (see APPENDIX A) with questions about their perception of collaborative teacher teams. The results from the survey, as illustrated in Table 3, indicate the following results: The strongest components of teachers' perception of teacher teams as indicated in the areas well established in the survey are: Accountability 40.0%, Team Structure 36.3%, Trust 31.9%, and Clarity of Purpose 31.3%. The

next strongest components of teachers' perception of teacher teams as indicated in the area of established is Clarity of Purpose 61.9%, Team Structure 55%, Accountability 52.5% and Trust 51.9%. The area that is least developed is the area of Trust, with highest results of not established at 16.3%, Team Structure 8.8%, Accountability 7.5%, and Clarity of Purpose 6.9%. What do these data say about teachers' perception of their experience with collaborative teacher teams?

Research indicates that teacher team structures began in 1998 with the work of Richard DuFour. In the beginning, there was only a handful of teacher teams established in schools; today there are hundreds of teams established in schools and districts across the country. DuFour (as cited in Thiers, 2016) described that the two major components of successful collaborative teacher teams are clarity of purpose and support, which if compared to the survey, are the components of clarity of purpose and team structure, which are strong areas of teacher experience in the survey. Comparing this research and the results of the survey indicate that over time, teacher teams have developed with a structure and clarity of purpose and accountability of the team members. Carpenter and Green (2018) conducted research that examined the importance of developing a shared vision and check-ins from time to time to ensure the team is working toward the goal of increasing student academic achievement. This research also supported the results of the survey, indicating accountability and clarity of purpose are components of the teacher teams experienced by the teachers in the survey.

Herrmann (2019) discussed that the team's purpose defines its process. Teams need to have a clear and explicit purpose. As the team examines the purpose, norms and roles need to be defined. The clarity of purpose and accountability are identified as components of a strong teacher team.

The weakest component on the survey of teachers' perception of collaborative teacher teams is Trust 16.3% Not Established. Even though 31.9% stated that Trust was Well Established, in the other two categorizes, it had the highest rating as Established 51.9% and Not Established at 16.3%. A functioning teacher team has a clear purpose and structure and the work is meaningful through shared learning and collaboration.

If conflict arises, it is openly discussed through a nonjudgmental dialogue. This conflict is allowed because the environment is trusting and all participants have equal time to speak and listen (Aguilar, 2012).

Trust is at the foundation of collaboration, and collaboration is the foundation of successful teacher teams. Studies examining teacher teams found that the ones that had trust had yielded the best results of student academic achievement. Principals need to lead in the area of trust by developing strong bonds and relationships with staff that result in teacher-to-teacher relationships and student-to-student relationships (Modono, 2017). Trust in schools builds as teachers have positive experiences, low-risk situations, and a comfortable environment. If there is trust in a school, teachers are more engaged, cooperative, productive, and accountable. Trust inspires hope in teachers that they can develop their students and reach their goals (Berg, Connolly, Lee, & Fairley, 2018). Relational trust is established through social respect, grounded in school discourse. This discourse is grounded in confidence and respect of all community members. All voices are heard and respectfully listened to even if the points of view differ (Bryk & Schneider, 2003).

Summary

The purpose of this study is to identify the relationships among English Language Arts teacher teams, their collaboration in lesson planning utilizing formative assessment, and its

impact on the academic achievement of middle school students. This study was conducted using a mixed-method of research through survey, observations, and interviews.

The results indicate that teacher team collaboration in creating formative assessment do not have a positive influence on the academic achievement of middle school students (sixth grade students) in the area of English Language Arts.

The teacher's perception of the experience with teacher teams indicate they are functioning in the area of Accountability 40.0% Well Established, Structure 36.3% Well Established, and Clarity of Purpose 31.3% Well Established. These scores do not support the academic Mean score of 62.27% of the students who were taught by the teachers who participated in collaborative teacher teams. In contrast, the students who were taught by teachers who do not participate in collaborative teacher teams had a Mean score of 78.60%.

Teacher teaming is designed to foster change in instruction and increase academic achievement (Sparks, 2013). In this study, the results of the teacher perception did not produce an increase in students' academic achievement. These results will be further developed in Chapter 5 with an explanation as to why this study did not support the concept that teacher team collaboration in creating formative assessment increases student academic achievement in the area of English Language Arts middle school students.

Chapter 5

Summary Conclusion

Discussion and Recommendations

The purpose of this study is to identify the relationship between common formative assessment through teacher collaboration, and its impact on academic achievement of middle school students. This chapter reviews the prior chapters of this research. It describes the conclusions and implications of the findings in addition to suggestions for implementation of further study. In conclusion, it discusses the limitations of the data and what further research can be discussed utilizing these findings.

Research suggests that successful collaborative teacher teams have the following five elements: structure, leadership, a cooperative climate, personal accountability, and a task. These teacher teams must have sustained collaboration in the areas of strategy, curriculum, and assessment as a primary vehicle to guarantee student improvement (Killion, 2015). Well-functioning collaborative teacher teams are essential to continuous school improvement. Effective teacher teams strengthen teaching and learning, and improve student academic (Sparks, 2013). Tucker (2019) discussed that successful schools are not in the United States because the teachers in the States spend most of their day in front of students and not teaming, or even learning the art of teaming. Tucker suggested that these teams are just groups of teachers put together to learn, or hope they learn, when truly not instructed how to function in a purposeful, goal-driven team.

Hence, this may explain one factor that teacher perception of their teacher team does not produce student academic achievement. Venables (2019) further suggested the reason for lack of performance by students is because when these teachers meet, they discuss the what and the

when, but the how is not embodied into the conversation. Tucker (2019) and Venables (2019) may have explained why the results of this study did not prove that teachers who work collaboratively in teams creating common formative assessment have a positive effect on middle school (sixth grade) English Language Arts students.

Popham (2008) argued that formative assessment is a research, data-free tool that can benefit both student and teacher. Popham also examined the opposite use of formative assessment as an answer to standardized testing because some teachers feel that if instruction is adjusted to meet the needs of all students, then these students will perform higher on standardized testing. Popham further argued that it isn't this simple because different tests have different functions and students need to be instructed on the nuances of different test strategies.

Chapter Summary

The purpose of this study is to identify the relationships among English Language Arts teacher teams, their collaboration in creating formative assessment, and its impact on the academic achievement of middle school students. The setting of this study was two urban private Nursery through Grade 8 schools in one New York City district. The design for this study is a mixed-method design, which is in a naturalistic design, descriptive, using an inductive analysis. The research included observations, interviews, small samples of lesson plans, and assessment tools (Roberts, 2004). Other studies have discussed collaboration, formative assessment, and curriculum design (Voogt et al., 2016).

Reeves (2009) described teaching as a performance utilizing a script and the script does leave room for improvisation. However, even with the improvisation, there are times when this script does not produce learning for all students in the class.

This inability to provide learning for all students is the basis for the inquiry that motivated the research into teacher collaboration in creating formative assessment in the middle school in order to increase student academic performance. This study delved into collaboration in creating common formative assessment and its effect on student academic achievement. The research was centered around the following research questions:

1. To what extent does participation in a collaborative teacher team influence the creation of common formative assessment?
2. How does teacher perception of collaborative teacher teams influence their work in curriculum building?
3. To what extent do these common formative assessments created in collaborative teacher teams affect student achievement?

This research included theoretical framework underpinnings of formative assessment and teacher teams, the history of formative assessment and collaborative teacher teams, topic rationale, and scholarly research. Researchers such as DuFour, Popham, William, and Fullan, were examined throughout the study to assist in answering the research questions and to provide a platform for the research in the field.

The design for this study was a mixed-method research design, which gathered both quantitative as well as qualitative data to answer the research questions.

The research included observations, interviews, small samples of lesson plans, and standard assessment tools (*t*-test; Roberts, 2004). This study examined the collaboration in creating common formative assessment and its effect on student academic achievement.

The reason for the selection of mixed-method design was because both qualitative as well as quantitative data were needed for this research study. The elements of this study included, but

are not limited to, a narrative, holistic setting, as well as experimental design and testing of a hypothesis (Roberts, 2004). A correlation research method was utilized for this study, as is in most educational research. The reason for this choice was that in this study, it was difficult to determine which factor caused a change to another factor. Instead, it was to determine the extent to which both factors were related (Lodico et al., 2010). The first was teacher teams creating common assessment and the second was its effect on student academic achievement. The measured value can be large or small as determined by the researcher and the study. Data were collected randomly, but they were collected at one point in time during the study. All data were collected individually for each member of the teacher team through their survey responses, and for the students' individual academic data. These data were examined using statistical tests that explained how the variables were related. This correlation design was an example of a prediction model (Privitera & Ahlgrim-Dezell, 2019).

Conclusions and Further Discussion

The conclusions are discussed through the framework of the research questions. Research question 1 and question 2 are related to the data on the students' academic performance:

Question 1—To what extent does participation in a collaborative teacher team influence the creation of common formative assessments? Question 3—To what extent do these common formative assessments created in collaborative teacher teams effect student achievement?

The results indicated that participation in collaborative teacher teams creating common formative assessment had no significant effect on the academic achievement of middle school (sixth grade) students. To the contrary, School 2 had higher academic achievement on the posttest than School 1, which has teacher teams that create common formative assessment.

William (2018) explained that sometimes, teachers define formative assessment as at the moment adjustment to teaching, or a reteach the next day after examining exit tickets. This is not formative assessment. In utilizing formative assessment strategies, the teacher needs to identify where the learners are in the learning process, establishing where they are going and how are they going to get there. In classroom observations, most of the formative assessment techniques utilized were at-the-moment adjustments, and few strategies actually designed at the team meetings.

Table 4 compares the posttest scores of School 1 and School 2 on the Degree of Reading Power Test.

Table 4

Posttest Results

	School 1	School 2
Mean	62.27	78.60
<i>SD</i>	20.92	19.77
Structural Equation Modeling	4.46	3.95
<i>N</i> (Sample Size)	22	25

Research question 2: How does teacher perception of collaborative teacher teams influence their work in curriculum building? A random teacher survey was designed to collect teacher perception of their experience with teacher team. The results are illustrated in Figure 4.

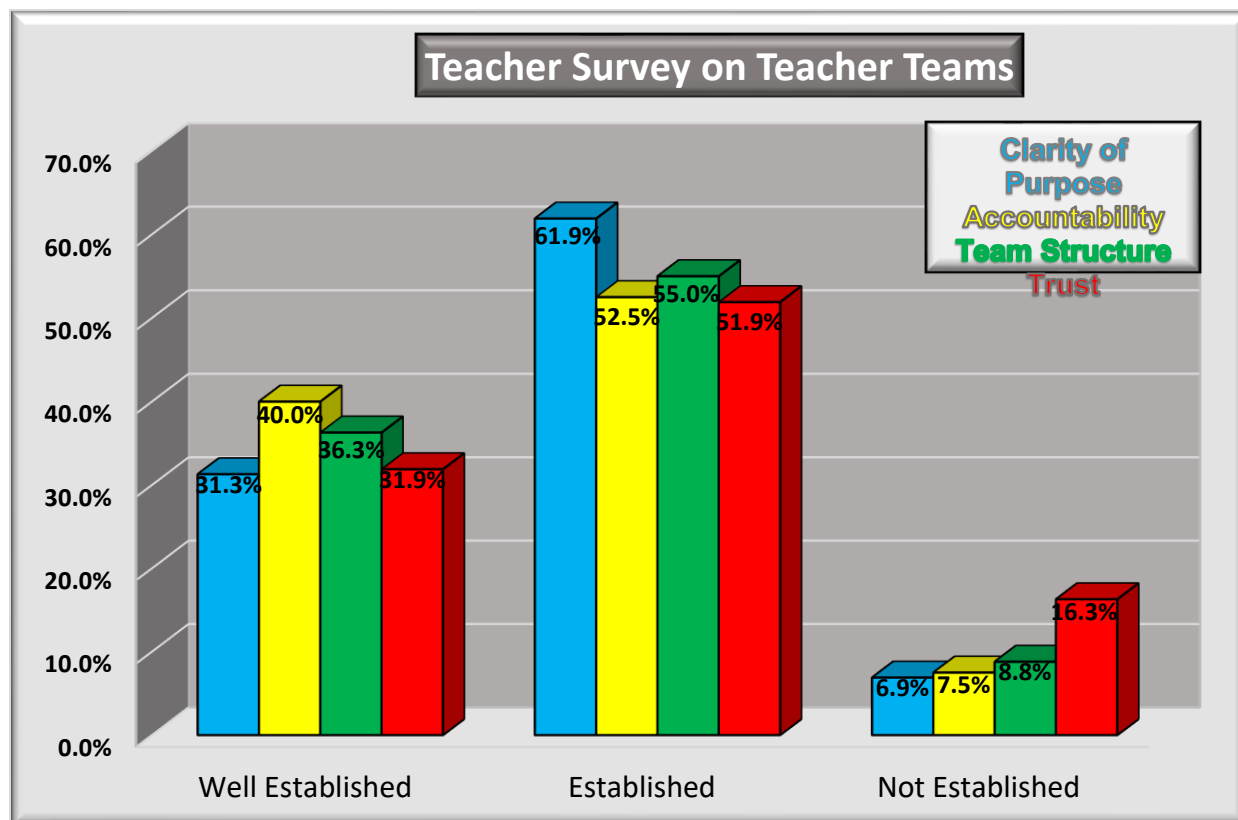


Figure 4. Teacher survey on teacher teams

Figure 4 indicates that teachers' perception of their participation in teacher teams is that their teams are Well Established in the areas of Accountability 40.0%, Team Structure 36.3%, and Clarity of Purpose 31.3%. Even though Trust rated 31.9%, it rated the highest score in Not Established 16.3%. These data indicate that the teacher teams are well functioning and that these teams have structure, accountability, and clarity of purpose, which in this study was the creation of common formative assessment. Yet, School 2 had higher student academic performance on the posttest.

Figure 4 measures the perception of teachers and this relationship to teacher teams. Research has demonstrated that teachers' perceptions and attitudes are key factors in improving education. Teachers who believe in teacher teams and their power to improve instruction, will participate in these teams and discuss their practice, including assessment. Thus, teachers need

training in creating teacher teams and creating common formative assessment, and they need the time to develop these skills in the teams as well as in their classrooms (Karim, 2015). This research may support the findings of this study that it did not demonstrate a positive academic growth in students taught by teachers who participated in collaborative teacher teams that create common formative assessment.

Recommendations

The aim of this study was to identify the relationships among English Language Arts teacher teams, their collaboration involving common formative assessment, and its impact on the academic achievement of middle school students.

Examining the data presented in Chapter 4 of this study, the students taught by the teachers who participated in collaborative teacher teams had lower test scores on the Degrees of Reading Power test given to both groups at the conclusion of the study. One recommendation, as a result of this research, is that more research needs to be done. Another study should look at the schools in the countries that teaming is successful and examine their use of common formative assessment and its effect on academic performance. An entire study on collaborative teaming would be a next step in this research. Since studies on collaborative teacher teams indicate that they successfully influence student academic development, maybe the team observed for this study does not have a design that leads to success. Does this time always have a clarity of purpose, accountability, structure, and an element of trust (Sparks, 2013)? Another recommendation would be to examine just teacher teams and the performance of their students. The final recommendation would be to examine just common formative assessment used in middle school classrooms.

Use of Findings

The survey used in this study was a random study of 40 nursery through Grade 8 teachers and their experience in teacher teams. These findings can be used to examine more closely the structure of the teacher teams in which they participate. DuFour (2004) discussed that even though there are many research studies that teacher collaboration indicates best practice, many schools still work in isolation. This is supported by Figure 4 that teacher perception is that they are working collaboratively, yet the data of this study indicate these schools are working more in isolation, and/or their teams join forces strictly on an operational level, solving the what and why of education and not the how. Although these committees serve a purpose in schools, they do not get to the work that includes professional dialogue that transforms schools. Are these teams, as research indicates, successful collaborative teacher teams having the following five elements: structure, leadership, a cooperative climate, personal accountability, and a task?

These teacher teams must have sustained collaboration in the areas of strategy, curriculum, and assessment as a primary vehicle to guarantee student improvement (Killion, 2015). If these teams are designed to create common formative assessment, how are the teachers learning about common formative assessment?

These findings are inconsistent with traditional research in the area of successful teacher teams. Tucker (2019), researching successful schools and teacher teams, observed that when teachers work together collaboratively in teams to create lesson plan and activities by looking at student past work products, they have a greater impact on student learning. Teachers need to look at their plans and activities before they teach, so that changes can be made before it is taught. Tucker (2019), Many (2008), Popham (2008), and Venables (2019), among other researchers, have found that if teacher teams incorporate the five essentials into their meetings,

then they will impact student academic achievement. These five elements (structure, leadership, a cooperative climate, personal accountability, and a task) were not observed in the teacher team studied in this research; therefore, the study did not demonstrate an impact on academic achievement of these sixth grade English Language Arts students. In addition, Venables (2019) found similar results in the area of students with special needs; when teachers work together in successful teacher teams, their impact on special needs students demonstrates progress. Special needs students compose a population that exists in all school structures. Many (2008) discussed the benefits of teacher teaming when it is incorporated into the daily schedule of the classroom teacher.

When time is created for the teachers during the day, it allowed for protected, dedicated time and indicated to the community that this is a high priority of the school administration.

Another use of the findings would be to examine if the elementary grade (first through fifth) teachers use common formative assessment, or are only middle school teachers (sixth, seventh, and eighth). This may account for the difference because if the nonteacher team teacher is developing curriculum in the same manner as the elementary teachers, then the students will perform higher because of a sense of comfort. Powell and Kusuma-Powell (2019) presented a variety of questions to educators as they began a new teaching initiative as formative assessment:

What understandings need to be in place prior to introducing formative assessment? At what age or grade can students articulate that they are struggling with a lesson, or they are prepared for the next challenge? These are questions that teacher teams need to examine before they begin common formative assessment in middle school classrooms. If these students were instructed in classrooms by teachers who participated in teacher teams while these students were in the elementary grades, then the foundation is in place to build upon. These findings also are

inconsistent with the research on formative assessment. William (2018) observed various classrooms that utilized common formative assessment. His studies indicated that the bridge between teaching and learning is time and student needs. As educators, it is difficult to predict the when and how a particular student will learn a concept. Thus, the need for constant assessment within the learning structure is a key component to student achievement. The role of the teacher is to be the effective engineer to the learning process.

Marzano (2006) further explained that feedback is a key element in formative assessment, assessment needs to be frequent, and its purpose is to give the students a clear picture of the task at hand.

Do the teachers in this study understand the definition of formative assessment and are these elements missing, causing the inconsistent results of this study?

Summary

The researcher strived for reliability of the data; however, there were limitations to the data collection that were beyond the researchers' control. The researcher bias and experience, or attitude on teacher teams, is an identified limit to the study. The time allocated to the study was limited to a two-week span; if the teacher teams had more time to work together and collaborate in creating formative assessment, may the results have been influenced? In addition, the teacher teams examined received professional development from one organization in the area of common formative assessment. If the researcher examined different classrooms where the teachers' professional development was more eclectic, then the results may have differed. Also, in regard to the teacher teams, were they ever instructed on the mechanisms of a successful teacher team meeting?

Additionally, the researchers survey was limited to only 40 teachers and their perception of their experience with teacher teams. If a researcher were to replicate this study, maybe the survey could question a larger pool of teachers' and survey questions could include specific questions about the teacher teams on which they have been actively participating. Also, focus questions and interviews could be included in the survey portion of the study.

Finally, the subjects numbered only between 22 and 25, sixth grade English Language Arts students; maybe the subject numbers could have been larger with more of a cross-study of middle school students, including seventh and eighth grade English Language Arts students.

The limitations listed above indicate there is so much more research to be done when examining the relationships among English Language Arts teacher teams, their collaboration in creating formative assessment, and its impact on the academic achievement of middle school students.

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APPENDIX

Teacher Survey

Identification Number _____ School _____ Date _____

There are four elements that are characteristics of an effective teacher team. They are clarity of purpose, accountability, team structure, and trust (Sparks, 2013).

Please choose a response to each question based on your experience with teacher teams.

Clarity of purpose:	Well Established	Established	Not Established
1. There are clear goals and mission and vision in line with the school vision and mission.			
2. All team members are working with these goals through a specific plan of action.			
3. They are SMART goals specific, measurable, attainable, realistic and timely.			
4. There is a shared understanding on how this plan of action will affect student achievement.			

Accountability:	Well Established	Established	Not Established
1. Team holds all members accountable to a plan of action.			
2. All members are focused on student learning.			
3. All members review data, and act upon it for the best student outcomes.			
4. Identify potential problems and work to resolve as a group.			

Team Structure:	Well Established	Established	Not Established
1. Has observable systems in place for meeting and working at these meetings.			
2. Has defined roles, responsibilities, protocols and framework.			
3. Has a set facilitator or systems in place to rote facilitators per meeting.			
4. Engages in reflection on the work and celebrates success and works through challenges.			

	Well Established	Established	Not Established
TRUST:			
1. Team members are open-minded to all points of view and openly discuss all aspects.			
2. Risks are openly taken in offering feedback and assistance.			
3. Discuss problems and mistakes and openly discuss a resolution.			
4. Look to opportunities to work as a group.			